DOCUMENT RESUME

ED 227 114 TM 830 016

AUTHOR Agard, Judith A.; And Others
TITLE About You and Your Friends: An Instrument of the PRIME Instrument Battery. Technical Report No. 1.
PUB DATE [77]
NOTE 118p.
PUB TYPE Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS Academic Ability; *Affective Measures; Anxiety; Disabilities; Educational Environment; *Elementary Education; Program Development; *Self Concept; *Self Evaluation (Individuals); *Special Education; Student Attitudes; Student Behavior; Student Characteristics
IDENTIFIERS *About You and Your Friends; *Project PRIME

ABSTRACT

This technical report is one of a series concerning the instrumentation for Project PRIME, which investigated the relationship of regular and special education classroom environments to student characteristics. About You and Your Friends (AYYF) is a self-report inventory of the affective characteristics of students. The instrument is suitable for use with normal and mildly handicapped students in the elementary grades. It measures four attitude and self-concept constructs: isolation/anxiety, school enthusiasm, academic competence, and misbehavior. AYYF was designed to be used in conjunction with two other PRIME instruments, the Teacher Rating Scale and Guess Who; these provide teacher and peer ratings of the same traits. The technical report is organized in four parts: (1) an introduction to Project PRIME and AYYF; (2) the development of AYYF, including the design and construction of the instrument, the scaling methodology and development of empirical scales, and instrument revision; (3) the psychometric properties of the instrument, including the nature of the sample and the conditions under which the psychometric data were collected; and (4) a summary. (Author/PN)

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ABOUT YOU & YOUR FRIENDS

An Instrument of the PRIME INSTRUMENT BATTERY

Judith A. Agard
Martin J. Kaufman
Melvyn I. Semmel
Donald J. Veldman
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Technical Report No. 1:

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edited by Jane Burnette

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PREFACE

This technical report is one of a series concerning the instrumentation for Project PRIME. Each report describes one PRIME instrument, providing the reader with all the information necessary to evaluate and/or utilize that instrument. These instrument reports are designed for two specific purposes: (a) to provide readers of Project PRIME research reports with an understanding of the instrumentation used in the PRIME studies and (b) to provide potential users of each instrument with the technical information necessary to employ the instrument for their own purposes.

Each of the reports contains two types of information. Basic information on the developmental history, psychometric properties, and administrative procedures is provided to facilitate the instrument's use. In addition, supplemental information on the rationale for certain instrument design decisions and the underlying theoretical and methodological models is presented to provide the user with the conceptual framework guiding the development of the PRIME instruments.

The instrument described in this report, About You and Your Friends (AYYF), is a self-report inventory of the affective characteristics of students. The instrument is intended for use with normal and mildly handicapped students in the elementary grades. It measures four attitude and self-concept constructs: isolation/anxiety, school enthusiasm, academic competence, and misbehavior.

AYYF was designed to be used in conjunction with two other PRIME instruments, the Teacher Rating Scale (TRS) and Guess Who (GW), which provide teacher and peer ratings of the same traits.

In the preparation of this report, the guidelines set forth by the American Psychological Association (1966) in Standards for Educational and Psychological Tests and Manuals were considered. The standards suggest, primarily, that a

"test manual should carry information sufficient to enable any qualified user to make sound judgments regarding the usefulness and interpretation of the test" (APA, 1966, p. 2). In order to adhere to this standard and to provide a wide audience with an understanding of the PRIME instruments, comprehensive documentation of all relevant, available information on the instrument has been included.

The technical report is organized in four parts. Part I provides an introduction to Project PRIME and AYYF; Part II describes the develcpment of AYYF, including the design and construction of the instrument, the scaling methodology and development of empirical scales, and instrument revision; Part III presents the psychometric properties of the instrument, including the nature of the sample and the conditions under which the psychometric data was collected; and Part IV summarizes the report. Accompanying this report is a User's Manual that provides concise directions to users for administering and scoring the instrument.

PART I. INTRODUCTION

Project PRIME was initiated to investigate the relationship of regular and special education classroom environments to student characteristics. To familiarize the reader with the context within which AYYF was developed, this part introduces the concept of mainstreaming and describes the nature of the PRIME research.

The field of special education is currently undergoing a major reorientation in the philosophy of administrative and instructional arrangements available for providing special education services to mildly mentally handicapped students. Traditionally, the self-contained special class has been the principal organizational

arrangement for delivering special education services to the mentally retarded. Recently, excessive dependence on this type of delivery system has been questioned (Christoplos & Renz, 1969; Dunn, 1968; Lilly, 1971), and alternative delivery systems have been proposed that provide special education services to mildly handicapped students in a manner which permits them to remain members of the regular instructional program (Beery, 1972; Birch, 1974; Deno, 1970; Kreinberg & Chow, 1973). Administrative and instructional arrangements which provide special education services to handicapped students with minimal segregation from the regular program have been termed mainstreaming. Mainstreaming, therefore, can be considered as a range of administrative and instructional options which provide for the temporal, instructional, and social integration of eligible handicapped students with normal peers based on an ongoing individually determined educational planning and programming process (Kaufman, Gottlieb, Agard, & Kukic, 1975).

The principal question addressed by Project PRIME is for whom and under what conditions is mainstreaming a viable educational alternative. In its broadest conceptualization, PRIME is concerned with identifying the critical elements of classroom environments that optimize the educational growth of mildly handicapped students.

Project PRIME consists of naturalistic as well as experimental studies. Project PRIME, Year I (1971-72), was a naturalistic, large-scale, descriptive-correlational study focused on determining the nature of the relationship between learner characteristics and classroom environmental conditions. Project PRIME, Year III (1973-74), was comprised of two experiments. The first experiment was concerned with the effects of a Social Interaction Skills (SIS) program designed to promote the social competence of mainstreamed students. The second experiment was concerned with the effects of an Instructionally Based Appraisal System (IBAS),

designed to facilitate educational programming and planning for handicapped students. AYYF was originally developed for the PRIME Year I study and was revised for use in the Year III studies. This report provides information on the original version, referred to as AYYF(I), and the revised version, referred to as AYYF(III). Some statements may apply to both versions, in which case the acronym AYYF alone will be used.

Due to the large sample size (N=2210) of the Year I study, extensive psychometric information is available for AYYF(I), including reliability, validity, and normative data. Because the Year III sample is smaller (N=221), the psychometric information available for AYYF(III) is less extensive. AYYF(III) lacks normative data, and statistical evidence on its reliability and validity is not as well documented. For the most part, information about the revised version must be inferred from the original version. However, AYYF(III) is shorter, more precise, and easier to administer. For potential users, the choice between AYYF(I) and AYYF(III) will depend on research priorities; information is presented on both versions so that potential users may choose the one most appropriate to their purposes.

Both versions of AYYF are, in a strict sense, in a developmental stage. They were designed to be used in a research/evaluation context and were not intended to be used for making diagnostic decisions about individuals. The possibility exists that future research may indicate that AYYF is appropriate for diagnostic use, but at present such use cannot be recommended. AYYF should be used with caution. It has not been used widely, nor has it been validated in a variety of applications. The Project PRIME staff is engaged in ongoing development of the PRIME instruments, and welcomes feedback from other users or critics.

PART II. DEVELOPMENT

AYYF was developed as a self-report instrument designed to measure students' attitudes and emotional feelings about their school experiences. Development of the instrument involved a four stage process: design, construction, scale development, and revision. Each stage is considered in a separate section.

Design

The design stage of instrument development consists of four elements: establishing the criteria for instrument acceptability, determining the psychological content to be measured by the instrument (i.e., the item content and its underlying theoretical structure), delineating the characteristics of the potential respondents, and assessing the appropriateness of available alternative instruments.

Criteria

The first stage in designing an instrument battery is to establish criteria for assessing the appropriateness of an instrument for the study design. The PRIME descriptive-correlational design required a self-report instrument to measure the student's perception of his/her academic competence, social competence, personal attitudes, and psychoemotional states. In addition, the instrument content and format had to be appropriate for use with elementary-aged mentally retarded, learning disabled, minimally brain injured, and normal respondents. Finally, the instrument had to demonstrate acceptable reliability and validity for the anticipated respondents. These considerations suggested that the criteria for the development of the PRIME instrument battery be based upon the following considerations:

* the psychological relevance of the instrument content, including the theoretical structure and item content, and
* the psychometric appropriateness of the instrument for anticipated respondents, including reliability and validity.

Psychological Content

As an initial step in defining the requirements of the instrument, it was necessary to specify criteria for the instrument's psychological content. This was based on the four constructs mentioned earlier: academic competence, social competence, personal attitudes, and psychoemotional states. Each of these constructs was assumed to be composed of multiple subconstructs. Table 1 presents the hypothesized model underlying the design of AYYF. The subconstructs served as a basis for determining the item content of the instrument.

Respondent Characteristics

In addition to satisfying content criteria, the instrument had to take into account certain characteristics of the group of anticipated respondents. The students for whom the instrument was intended represented a wide range of mental as well as chronological ages. In addition, the inclusion of mildly handicapped students in the PRIME sample meant an extensive variance in academic achievement. Finally, instrument content needed to be consonant with school experiences encountered by third-, fourth-, and fifth-grade students in a variety of demographic and sociocultural settings.

All the respondents were young (between 8-12 years) and many of them had experienced limited school success. Therefore, test motivation for many students was expected to be extremely low. This dictated the use of an instrument format and response mode that would maximize respondent attention.

Table 1

Affective Constructs Underlying AYYF

Construct	Subconstructs
Academic competence	Academic self-concept Self-directedness Achievement motivation
Social competence	Loneliness Behavioral self-concept Misbehavior Peer acceptance
Personal attitude	Attitude toward school Attitude toward teacher
Psychoemotional states	Locus of control School anxiety Social anxiety

In addition, the anticipated mental age range of 5.0 to 15.0 years and the concommitant variance in academic achievement required an instrument that would not make extensive cognitive demands on the respondent.

Several subgroups imposed specific limitations on the instrument. The intended sample contained a sizeable proportion of Mexican-American students for whom English was a second language; they required an instrument format and administrative procedures that would assure valid assessment of bilingual respondents. The educable mentally retarded (EMR), language and/or learning disabled (LLD), and minimally brain injured (MBI) students involved in the study were expected to have poor linguistic ability, dictating an instrument that used common vocabulary and simple syntactic structure. Because EMR and LLD students often exhibit a tendency to focus on the concrete, perceptual qualities of a

stimulus rather than on its cognitive content, it was necessary to develop an instrument and answer sheet which minimized these tendencies.

In summary, certain requirements for administrative procedures and format were necessitated by the anticipated respondents. The instrument had to

* maximize motivation by commanding interest and attention,
* minimize cognitive demand by using simple vocabulary and syntactic structure,
* provide for valid assessment of bilingual respondents by providing translations when necessary, and
* reduce the respondent's tendency to focus on irrelevant features by using a nondistractive format.

Review

Having defined the criteria for the needed instrument, the test developers conducted a review of extant instrumentation in search of an instrument that fit the study's needs. The search consisted of reviewing potentially appropriate instruments that were suggested by Buros (1970), Johnson and Bommarito (1971), and the Association for Supervision and Curriculum Development publication, Improving Educational Assessment and an Inventory of Affective Behavior (1969). In addition, a review of personality, attitude, and sociometric tests on file at the Educational Testing Service Reference Library in Princeton, New Jersey, was conducted. Specimen sets of tests under consideration for use in Project PRIME were purchased and evaluated. Instrumentation was reviewed from three perspectives: (a) the relevance of item content, (b) the appropriateness for anticipated respondents, and (c) the quality of psychometric evidence. (See Appendix A for a list of the instruments reviewed; references for tests mentioned in this section may also be found in Appendix A.)

In light of the student characteristics, existing instrumentation was found to have a multiplicity of limitations. First, many instruments employed response formats that required the student to differentiate 5-, 6-, or 7-point scales (e.g., Tennessee Self-Concept Scale; Fitts, 1965). The cognitive demand made by such scales was considered too difficult for mentally retarded students. Second, many instruments were characterized by a difficult level of vocabulary and syntax (e.g., The How I Feel Test; Grady, 1965). Third, some instruments, such as the Lipsitt Children's Self-Concept Scale (Lippsitt, 1958), had not been standardized for the age range of the PRIME sample.

A fourth limitation concerned the lack of reliability and validity reported for instruments being used in research with handicapped students. Many instruments, still in an early developmental stage at the time of Project PRIME instrument development, had only limited reliability data available (e.g., Laurelton Self-Attitude Scale; Gorlow, Butler, & Guthrie, 1961). The problem of reliability was further exacerbated by the low reliability coefficients reported for subscales of some existing personality inventories, for example, the Reserved versus Warm Hearted subscale of the Children's Personality Questionnaire (Porter & Cattell, 1968). In addition to their lack of acceptable reliability, many instruments were judged to lack content validity. Specifically, the test items were not related to the constructs of interest and/or the item content referred to school experiences relevant only to older or otherwise noncomparable student populations (e.g., CLOE-C Scale, Miller, 1963).

The search of extant instruments revealed their limitations in psychological content, appropriateness for the designated respondents, and/or reliability and validity. Because of these limitations, the decision was made to develop new instrumentation.

Construction

In instrument development, the construction stage involves the development of an instrument that meets the criteria outlined for the instrument design. This section presents the critical aspects of the instrument construction, including determining the item content, shaping the content to take into account student characteristics and psychometric considerations, and developing the response forms. Also included in the construction stage are aspects related to establishing instrument administration procedures, developing a Spanish translation, and providing for pilot testing and critical professional appraisal of the instrument. Each of these aspects will be considered separately.

Item Content

No existing instrument in its entirety was found to be appropriate for the measurement of the students' attitudes, feelings, and emotions. However, parts of existing instruments were considered relevant to the constructs of concern. Therefore, the first step in the generation of items for AYYF was the development of an extensive item pool related to these constructs.

A wide variety of existing instrumentation was reviewed (Appendix A) and a preliminary item pool was constructed from items selected from these existing instruments. Items were selected for the item pool if they related to the subconstructs of interest to the study. Once the preliminary item pool was developed, it was carefully reviewed to eliminate duplicate items, unclear items, items that had, upon closer examination, a doubtful relationship to the variables under consideration, and items that were obviously inappropriate for young students or for specific sociocultural subgroups of students.

Second, the items that comprised the AYYF(I) item pool were extensively rewritten to adapt them to the specific needs of the study. Changes were made

in the language of the items, particularly in the vocabulary and syntactic structure, to make the items more easily understandable to elementary-aged normal and handicapped students from diverse sociocultural backgrounds.

Third, because of the need to use simple vocabulary and syntax and to force task attentiveness, it was decided that an interrogative format using a limited vocabulary should be employed. The use of an interrogative rather than declarative sentence draws maximum attention to the fact that a response is expected. A forced choice, binary (yes/no) response mode was used in order to further clarify the student's task.

These reductions of language complexity and format difficulty had important psychometric implications. The decision to reduce the cognitive demand by using a binary scale sacrificed reliability to an unknown extent. However, reliability considerations must be balanced with a concern for validity. Therefore, the decision was made that the possible sacrificed reliability inherent to binary scaling would be offset by the increase in validity that would accompany a reduction in the level of cognitive demand. In an effort to counter the expected decrease in reliability due to the use of a binary scale, more stimulus items were included, since reliability increases curvilinearly with the length of the instrument (Cronbach, 1971). Thus, the original instrument was purposely constructed to include more items than the investigators anticipated would be required in revised versions.

The item pool was reviewed to determine if an adequate number of items were included to measure the subconstructs under consideration. New items, invented by the test developers, were added to provide a satisfactory measure of each subconstruct.

Finally, since the complete item pool contained too many items to be administered efficiently and more than were necessary to provide reliability for each intended subconstruct, the item pool was extensively reduced so that

only items with maximum language clarity and construct relevance were retained in the final instrument. Once the items were selected for AYYF(I), they were randomly ordered and then classified as having positive, neutral, and negative connotations. Certain items were rewritten to assure a balance between items in which a "yes" response or a "no" response signified a positively valued event, thereby eliminating a positive or negative response set. The items selected all involved the student's perceptions of his/her experiences in school and with his/her friends; hence, the instrument was titled About You and Your Friends.

Response Forms

Consideration of the respondent characteristics resulted in certain critical design decisions regarding the response forms and administrative directives. The concrete, noncognitive focus of EMR, LLD, and MBI students, as well as the need to force attention on the task, dictated a response form that would minimize potential response bias or position effects. It was decided that writing the words "yes" or "no" would reduce the student's tendency to form response sets caused by position perseveration on the answer sheet (i.e., marking response choices so that a pattern is formed). Furthermore, a written response forces the respondent to take more time and hopefully to be more reflective, thus reducing the probability of a capricious response.

Response forms were designed to maximize the accuracy of response placement. An entire line was provided as response space for each item, and the item number was printed in large type. The response spaces were grouped into blocks of five and each block was sequentially lettered. As the tester read the items, the item numbers and block letters were emphasized in order to maximize the likelihood that students would respond in the appropriate spaces. Wide spaces were

provided between response lines to allow for the large handwriting of young students. A sample answer sheet is included in Appendix B.[1/]

Administrative Procedures

The development of directives for instrument administration also had to be concerned with the respondent characteristics. The academic ability level of mentally retarded and learning disabled students required administrative procedures that would minimize reliance on student academic competence. Consequently, it was decided that the instrument should be read to the students to assure that the instrument responses would be minimally correlated with student reading achievement.

Furthermore, because handicapped students are generally characterized by poor academic performance, a short attention span, and a history of prior school failure experiences, it was decided to administer the instrument in small groups. The small group arrangement maximizes the ability of the test administrator to promote a positive emotional climate for the student. In small groups, the tester can attend more carefully to each student and provide more adequate individual assistance to the student in terms of explaining or rephrasing questions. Finally, students feel more comfortable requesting assistance in a small group setting than when the entire class is present.

In addition to concerns regarding academic competence and motivation, the attentional characteristics of mildly handicapped students necessitated limiting the length of the testing session. The administrative directives for the instrument suggest that AYYF(I) be administered in two 30-minute sessions to reduce student boredom and lack of attention and to limit student absence from instruction

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1/ Experimentation with machine scoreable answer sheets has been initiated by the developers. Users wishing to employ machine scoreable answer sheets should request further information.

at any one time. However, this was not a rigid time limit; testers were instructed to allow as long a time period as students needed to understand and complete the instrument.

Finally, a concern for Spanish-speaking students for whom English was a second language required administrative procedures which would assure valid measurement of the constructs for this population. These procedures involved encouraging local education agencies to use bilingual test administrators and instructing test administrators to provide Spanish equivalents for words and phrases that students did not understand. To assist test administrators in providing Spanish equivalents, a translation of the instrument was developed using the Spanish language patterns of Mexican-Americans residing in Texas.

Spanish Translation

The Spanish translation was provided as an aid to test administrators in translating specific items and was intended to be administered as a complete instrument only in extreme circumstances. Directives for test administrator use of the translation were based on two observations. First, local Spanish language patterns were too different to permit one single standardized translation of an instrument to satisfy all variations of local colloquial usage. Second, most Mexican-American students in public schools possessed a working knowledge of spoken English. Thus, the primary purpose of the Spanish translation was to standardize tester responses to student requests for Spanish assistance in understanding item content.

The translation of AYYF(I) was prepared by Ms. Isaura Barrera, Chief Consultant, and Ms. Alba Luna, Instructional Consultant, both of the Special Education Division, Education Service Center, Region XX, San Antonio, Texas. The process was as follows.

1. The two translators independently translated AYYF from English to Spanish.

2. Each translator translated the other's Spanish version back into English.

3. Both English and both Spanish versions were compared.

4. For items in which the Spanish translations were different, the translators consulted bilingual teachers in predominantly Mexican-American schools to obtain a translation which would be understood by Mexican-American students. For some items, two translations were offered, one a pure Spanish version and one a Tex-Mex version.

Critical Appraisal

After the initial construction activities had been completed, the instrument underwent a critical examination by professional personnel. It was examined and evaluated by the following educators to determine whether the language and syntactic structure were appropriate for the age group and language ability range of the intended respondents.

1. Dr. Ray Glass, Center for Innovation in Teaching the Handicapped, Indiana University, Bloomington, Indiana

2. Dr. Martin Kaufman, Director, Intramural Research Program, Division of Research, Bureau of Education for the Handicapped, Washington, D.C.

3. Dr. Melvyn Semmel, Acting Director, Center for Innovation in Teaching the Handicapped, Indiana University, Bloomington, Indiana

4. Dr. Walter Stolz, Department of Psychology, Earlham College, Richmond, Indiana

The instrument was reviewed by the following people for ease of administration, content validity, and potential test reliability.

1. Dr. Samuel Ball, Educational Testing Service, Princeton, New Jersey

2. Mr. Jerry Barstow, Coordinator of Reports Management Systems, Texas Education Agency, Austin, Texas

3. Dr. Thomas Cook, Department of Psychology, Northwestern University, Evanston, Illinois

4. Dr. Martin Kaufman, Director, Intramural Research Program, Division of Research, Bureau of Education for the Handicapped, Washington, D.C.

5. Ms. Patricia Prewitt, Department of Adult Education, Texas Education Agency, Austin, Texas

6. Mr. Walter Rambeau, Consultant for Office Planning, Texas Education Agency, Austin, Texas

7. Dr. Melvyn Semmel, Acting Director, Center for Innovation in Teaching the Handicapped, Indiana University, Bloomington, Indiana

8. Dr. Thiagarijan Sivasailam, Center for Innovation in Teaching the Handicapped, Indiana University, Bloomington, Indiana

9. Dr. Herbert Walberg, Department of Educational Psychology, University of Illinois at Chicago Circle, Chicago, Illinois

The instrument and items were reviewed for ethnic and cultural appropriateness by the following educators representing various minority groups.

1. Ms. Magnolia Baker, Consultant for Special Education and Counseling, Department of Counseling, Texas Education Agency, Austin, Texas

2. Ms. Isaura Barrera, Chief Consultant, Special Education Division, Education Service Center, Region XX, San Antonio, Texas

3. Ms. Alba Luna, Instructional Consultant, Special Education Division, Education Service Center, Region XX, San Antonio, Texas

4. Ms. Jo Ann Paul, Chief Consultant in Early Childhood Special Education, Department of Special Education, Texas Education Agency, Austin, Texas

5. Mr. Juan Solis, Educational Program Director, Bilingual Program, Texas Education Agency, Austin, Texas

As a result of the professional review, the sentence structure and vocabulary of certain items were changed and certain items inappropriate for minority group students were modified or deleted.

Pilot Testing

AYYF(I) was then pilot tested on normal and handicapped students in the age range appropriate to Grades 2 through 5. The pilot-test sample was composed of 40 normal and 22 handicapped and slow-learning children. The breakdown by ethnic group was 34 black, 20 white, and 8 Mexican-American. The pilot procedure also included

an evaluation and approval of the instrument by the superintendents, directors of special education, principals, and school psychologists in the districts piloting the instrument. Changes in wording and exclusion of some items resulted from an evaluation of pilot-test protocols. More extensive formative pilot testing of the instrument was limited by the practical confines of funding and project scheduling.

With the conclusion of pilot testing, the processes of the construction phase of AYYF(I), including determining the item content, developing response forms, establishing administrative procedures, preparing a Spanish translation, obtaining a professional review, and pilot testing, were complete. This phase resulted in an instrument which met the design criteria outlined in the previous section.

Scale Development

Previous sections of Part II have considered the design and construction of AYYF(I). The third stage in the development of AYYF(I) was the emprical derivation of the scales that provide the basis for measuring the personality constructs of concern and the determination of a means for computing scores for these scales.

After AYYF(I) had been constructed, it was administered to the Project PRIME sample. The sampling procedures, sample characteristics, and administrative procedures are described in Part III. This administration resulted in a set of response protocols from which empirical scales were derived by factor analysis. Scale scores for each protocol were then computed. This section (a) provides a brief description of the methodology used to derive the factor structure, (b) describes the factor structure obtained for AYYF(I), (c) presents the scale-scoring methodology, and (d) provides a definition of the scales, along with guidelines for interpreting scale scores.

Factor Analysis Procedures

As discussed earlier, the construction of AYYF(I) was designed to measure four distinct personality constructs: academic competence, social competence, personal attitudes, and psychoemotional states. The first requirement in the development of personality scales from AYYF(I) was to determine whether the AYYF(I) items would cluster into item sets that could be used to measure the four hypothesized constructs. To investigate this, image analysis (a variant of factor analysis) was used to derive the empirical scale structure of the instrument.

Image analysis and principal components analysis[2/] differ in that image analysis considers only shared variance (variance that two or more items have in common), whereas principal components analysis considers both shared and unique variance (variance specific to only one item). In image analysis, it is assumed that the principal concern is replicability of measurement across items, and therefore unique item variance is of no interest.

The image analysis process (Guttman, 1953; Kaiser, 1963; Veldman, 1967) involves three analytic procedures: (a) the unique variances are subtracted from the correlation matrix, yielding the in-common variance-covariance matrix, (b) the in-common matrix is subjected to a principal components analysis to extract the maximum variance in a set of factors, and (c) a varimax rotation is conducted to redefine the factors, maximizing their clarity in terms of the original items. The image analysis procedure is outlined below with more detail provided for those steps that involve a greater extension of routine factor analytic procedures.

The first step in the image analysis procedure produces an item intercorrelation matrix (R) that is then converted to an image covariance matrix (G), which represents

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2/ Principal components analysis is used as a basis for comparison since most readers familiar with factor analysis procedures are familiar with it; according to Kaiser (1970), principal components analysis followed by a varimax rotation is a most popular technique.

the shared variance among the items. The G or in-common matrix is produced by substituting squared multiple correlations[3/] for the diagonal elements of R and partial correlations[4/] for the off-diagonal elements of R. This procedure removes all unique variance due to any one item from the R matrix, allowing only the in-common variance of sets of two or more items to be included.

The second step is to extract the principal components (or factors) from the G matrix using a principal components analysis; this produces a set of uncorrelated (orthogonal) factors. The third step involves subjecting the set of uncorrelated factors to a series of varimax rotations to determine the optimal number of factors to consider, using successively greater numbers of principal factors (Veldman, 1974). For each rotation, the varimax criterion value -- the index of structural simplicity which is maximized during the rotation process -- is obtained. This value peaks at the rotation of the "correct" number of common factors. Given the number of factors established by the varimax criterion value, the varimax procedure assigns items into sets that can be examined for psychological interpretability.

The final product of the image analysis is a defined factor structure consisting of an optimal number of uncorrelated item sets (factors) derived from the original instrument item pool. These item sets (or factors) form the basis for defining the scales that measure the psychological concepts represented by the test.

3/ The multiple correlation is the maximum correlation between a variable and a linear combination of a set of variables. The squared multiple correlation is the variance explained within one variable by a particular linear combination of other variables.

4/ The partial correlation is the maximum correlation between two variables that can be explained by a linear combination of other variables.

AYYF(I) Factor Analysis Results

The image analysis procedure outlined above was applied to data obtained from the Project PRIME Year I administration of AYYF(I), using four separate subject groups: EMR students, LLD/MBI students, normal students, and the total student sample. The analysis was conducted using only protocols containing no missing items; this procedure did not introduce any serious bias into the results, since members of any given subgroup were not disproportionately eliminated from the analysis and the total proportion of subjects eliminated was very low (see Table 2).

The factor structures obtained from image analysis for the four populations were similar but not identical. Using the varimax criterion value as an index of the optimal number of factors, three factors were extracted for the EMR, LLD/MBI, and total samples, whereas four factors were extracted for the normal sample. Both the three-factor solution and the four-factor solution yielded psychologically meaningful subscales. However, the four-factor solution from the normal sample was selected as the basis for the final scale structure of the instrument because it clearly separated two very different types of negative affect item content: loneliness and misbehavior.

The factor structure generated by the normal sample was examined to determine whether the factors were psychologically interpretable and to identify the personality constructs they represented. The identification of the construct represented by a factor involves establishing a verbal label or name for the factor. The verbal labels for the AYYF(I) factors were chosen by a consensus of the PRIME research staff using multiple criteria. First, because the scales were scored using a procedure that allowed each item to be counted equally in the scale score regardless of the factor loading, the names selected for the factors had to encompass the meaning of all the items on the scale. Second, whenever possible, the names selected

Table 2

AYYF(I) Missing Data Patterns by Subgroup

Subgroup	Proportion of records containing missing responses
Sex	
Male	4.8%
Female	4.0%
Handicap status	
EMR	6.9%
LLD/MBI	4.6%
Normal	2.6%
Ethnic group	
White	3.3%
Black	3.7%
Mexican-American	6.6%
Total	4.4%

for the factors were to be nonevaluative in tone. Third, the factor names were selected to represent the lowest level of inference from the actual items. Hence, unhappiness, for example, was not inferred from peer rejection, loneliness, or anxiety items. Based on these criteria, the four AYYF(I) factors were named Isolation/Anxiety, School Enthusiasm, Academic Competence, and Misbehavior. These four factors formed the basis for the scoring procedures described in the next section. Although these factors are slightly different from the theoretical constructs presented in Table 1, there is a clear relationship between the obtained

scales and the hypothesized constructs. This relationship is discussed in Part III, Psychometric Properties.

Scoring Procedure

The four empirically derived factors were scored using the factor structure as a base. Instrument scales were formed from the factor structure by assigning each test item to the factor (scale) on which it loaded most highly; thus, each item was assigned to only one scale. Table 3 indicates the items that loaded on each scale for AYYF(I). This assignment of items to factors was the basis for computing the scale scores using a Likert unit-weighted scaling procedure. Unit-weighted scaling rather than factor-weighted scaling was employed for both theoretical and practical reasons. Theoretically, the image analysis procedure locates sets of items that cluster together; therefore it is conceptually consistent to consider all items on a scale as equal contributors rather than weighting items based on factor loadings. Likert scaling has practical advantages as well. Unit-weighted scores (a) are easier to compute and to adjust for missing data, (b) are less subject to over-fitting effects, (c) provide a closer approximation to an oblique rotation (which permits correlated factors and hence is more reflective of real-world relationships), and (d) have been demonstrated empirically to have equal or higher validity than factor-weighted scores (Dagenais & Marascuillo, 1973; Goldberg, 1972; Veldman & Parker, 1970).

Using all subjects, a set of Likert unit-weighted scale scores was computed for each protocol. The scale scores are the simple sums of the scores of all items that loaded on a particular scale, taking account of any item reversals indicated by the signs of the factor loadings. When a protocol was missing responses to particular items, a prorated scale score was computed only if at least half of the items in the scale were answered. Specifically, the scaling procedure was as follows:

1. For each item that loaded positively on the scale, a "no" response was assigned a value of 1 and a "yes" response a value of 2.

2. For each item that loaded negatively on the scale, a "no" reponse was assigned a value of 2 and a "yes" response a value of 1.

3. Missing item responses were estimated using the mean response score for all other items on the same scale.

4. The numerical value, including estimated values, of each item response loading on the scale was summed, producing a scale score that was the cumulative total of the score of the individual items loading on that scale.

Appendix B contains explicit scoring instructions for both AYYF(I) and AYYF(III), including scoring tabulation sheets to facilitate manual scoring of both instruments.

For AYYF(I), the unit-weighted factor scales were subjected to a stepwise internal consistency analysis to determine how many items from the original factor scale to include in the final scale. The first step was the computation of an alpha coefficient of internal consistency for the two items with the highest factor loadings on the scale. Then, a second alpha coefficient was computed based on the two original items plus the item with the third highest factor loading. This process of successively computing alpha coefficients, each time including one additional item selected on the basis of its factor loading, was continued until all potential items on that scale were included. Usually, the list of these alpha values shows a unimodal trend, with the highest value occurring when more than half of the potential items are included. Items added after the unimodal peak has been reached are dropped, since their inclusion causes the alpha coefficient of the scale to decrease.

The sequence of alpha coefficients computed for each scale of AYYF(I) is shown in Table 3. Items were dropped from the AYYF scales if they had been added to the scale after the peak in the trend of alpha values had occurred. A total of 13 items were deleted from AYYF(I) for this reason. Response protocols were then rescored, using the reduced item content as determined by the alpha analysis procedure.

Table 3

Items and Associated Alphas for Each Scale for AYYF(I)

Factor I: Isolation Anxiety			Factor II: School Enthusiasm			Factor III: Academic Competence			Factor IV: Misbehavior		
Item	Alpha	Factor loading	Item	Alpha	Factor loading	Item	Alpha	Factor loading	Item	Alpha	Factor loading
77	--	-.49	25	--	.57	24	--	.54	37	--	.46
72	.45	-.46	19	.72	.55	44	.54	.50	61	.41	.45
74	.58	-.45	10	.76	.54	5	.63	.48	76	.53	.43
86	.64	-.44	14	.78	.51	30	.66	.47	91	.60	.43
92	.68	-.44	83	.76	.46	36	.69	.45	45	.65	.42
75	.70	-.40	62	.76	.46	38	.72	.45	70	.69	.40
35	.71	-.36	78	.75	.40	42	.73	.44	53a/	.71	-.38
67	.73	-.36	46	.77	.39	26	.74	.42	54	.72	.34
82	.74	-.35	93	.77	.37	63	.76	.41	64	.74	.34
31	.74	-.34	13	.78	.35	43	.77	.40	D 71	.75	.34
57	.74	-.31	73	.78	.35	12	.78	.40	D 40	.76	.29
D 18	.74	-.28	29	.79	.35	94	.80	.40	96	.76	.28
D 90	.74	-.27	D 69	.80	.34	32	.80	.37	52	.77	.28
D 21	.74	-.27	D 28a/	.80	-.33	D 17	.81	.34	1	.76	.25
D 59	.75	-.27	79	.80	.32	D 89	.81	.33	D 87a/	.76	-.23
47	.76	-.26	D 34	.81	.30	D 22a/	.81	-.33	D 16	.77	.18
D 3a/	.76	-.25	D 4	.81	.30	D 55	.81	.32	D 8	.76	.13
D 84	.76	-.21	D 51	.82	.29	D 41	.82	.31	D 50	.74	.11
27	.76	-.20	D 65	.82	.28	D 23	.82	.29			
2	.76	-.16	D 66	.82	-.28	D 56	.82	.27			
D 60	.75	-.16	D 80a/	.82	.28	D 7a/	.82	-.25			
D 39	.75	-.16	D 88	.82	.28	D 95	.82	.22			
			D 6	.83	.27	D 15	.82	.17			
			D 85	.83	.27	D 48	.81	.14			
			D 58	.84	.27						
			D 68	.84	.25						
			D 20	.84	.24						
			D 49	.84	.23						
			D 11	.84	.21						
			D 33	.84	.21						
			D 81	.84	.12						
			D 9	.84	.11						

Note. The item ocurring at the peak in the trend of alpha values for each scale is underlined. Items added after this point were dropped from the AYYF(I) scale. D indicates that that item was dropped from the test for Year III.

a/ Item reversed for scaling.

Definition of Scales

The image analysis procedure when applied to AYYF(I) yielded four psychologically interpretable factors: Isolation/Anxiety (Scale I), School Enthusiasm (Scale II), Academic Competence (Scale III), and Misbehavior (Scale IV). Although each scale is ultimately most precisely defined by the items that comprise it, a brief description of each scale is provided below. A complete list of the items included on each scale is provided in Table 3.

Isolation/Anxiety (Scale I) defines the degree to which a student expresses feelings of loneliness, rejection, and/or anxiety in school; that is, the extent to which a student reports feelings of being lonely, of being outside the mainstream of class activities, of being rejected, of being an object of ridicule, of being afraid of failure, and of being anxious when faced with new tasks or teacher questioning.

School Enthusiasm (Scale II) defines the degree to which a student expresses feelings of enjoyment with regard to his/her school experiences and school friends; that is, the extent to which the student reports that school is interesting and fun, that he/she likes school and is happy in school, and that he/she likes to be around other classmates.

Academic Competence (Scale III) defines the degree to which a student expresses self-perceived academic success; that is, the extent to which the student reports he/she is smart, works hard, and does well on assigned school work and tests.

Misbehavior (Scale IV) defines the degree to which a student expresses self-perceived inappropriate school behavior; that is, the extent to which a student reports getting into trouble, fighting, fooling around, and requiring teacher discipline.

The minimum and maximum scores (range) for each scale for both AYYF(I) and AYYF(III) are given in Table 4. In addition, Table 4 provides the 50% agreement

score -- the score a student would obtain if he responded positively to half the items; it represents a conceptually middle score.

The intercorrelations among the four scales from AYYF(I) are presented in Table 5. Although the image analysis generated orthogonal factors, the unit-weighted scoring procedure resulted in intercorrelated scales. The nature and direction of the correlations are discussed in Part III, Psychometric Properties.

Table 4

Range and 50% Agreement Scores for the AYYF Scales

	AYYF(I)			AYYF(III)		
Scale	Minimum	Maximum	50% agreement	Minimum	Maximum	50% agreement
Isolation/Anxiety	19	38	28.5	13	26	19.5
School Enthusiasm	30	60	45.0	13	26	19.5
Academic Competence	21	42	31.5	13	26	19.5
Misbehavior	13	26	19.5	11	22	16.5

Table 5

Intercorrelations Among AYYF(I)
Scale Scores for Normal and EMR Students

Scale	1	2	3	4
1. Isolation/Anxiety		.14	.01	.40
2. School Enthusiasm	-.23		.42	-.18
3. Academic Competence	-.38	.40		-.03
4. Misbehavior	.36	-.48	-.32	

Note. Coefficients above the diagnonal are for EMR students (n=605); coefficients below the diagonal are for normal students (n=1,783).

The scales described above were scored so that a high score indicated greater self-reported agreement with the personality construct defined by the scale. Thus, a student who obtained a score of 30 on School Enthusiasm enjoys school more than a student who obtained a score of 25. The scores for individuals have meaning only in relation to the scores obtained by other individuals on the same scale; they have no absolute meaning. The scores on different scales are not directly comparable; that is, a score of 30 on School Enthusiasm and 20 on Academic Competence does not mean that a student enjoys school more than he/she feels successful academically.

In summary, the scaling of AYYF(I) involved a factor analysis procedure which generated four factors. Items loading on each factor were scored using unit-weighted Likert scaling to produce four scales: Isolation/Anxiety, School Enthusiasm, Academic Competence, and Misbehavior. The next section describes the construction of AYYF(III) based upon the scale structure of AYYF(I) and assesses the comparability of the AYYF(I) and AYYF(III) factor structures.

Development of Revised Version

The final step in the instrument development process is the modification of an existing instrument based on its known psychometric properties in order to generate a more administratively feasible revised version. The similarity of the original and revised versions must be verified empirically.

Modification

As part of the total development effort, AYYF(I) was modified to produce a shorter, more precise instrument (about 50 items) that could be administered in one time block (about 30 minutes) and yet include enough items per scale to assure reliability (about 10 to 15 items).

In the revision process, each AYYF(I) scale was considered separately. First, the composition of each scale was examined to determine the existence of specific item components or clusters that contributed to the meaning of the scale. Individual items were logically and somewhat subjectively clustered into these components. Second, the factor weights of each item and the contribution that each item made to the internal consistency of the scale were examined. Third, feedback from test administrators was utilized to identify items that were too difficult for the students or had ambiguous meanings. Items that were difficult to understand or that did not contribute to the strength of the scale were dropped unless they were needed to assure a balance of items representing different components. Items that were retained for AYYF(III) were reviewed for vocabulary and structural difficulty and certain items were reworded to achieve greater linguistic clarity. As Table 3 indicates, the eliminated items had the lowest factor loadings and contributed least to the internal consistency of the scale. One major exception was that items dealing with attitudes about separate subject-matter areas (i.e., math and reading) were retained, in spite of their low loadings, on the basis that the students' attitudes about these specific subject-matter areas might be of interest.

Isolation/Anxiety consisted of three item components: loneliness, rejection, and anxiety. In an attempt to balance the components, Items 47 (Are you afraid to try new things?) and 27 (Do you get worried when you have tests in school?) were retained because they contributed to the anxiety component, even though their relative contribution to the internal consistency of the scale was slight. The revised scale consisted of 13 items: 5 anxiety-related items and 8 loneliness/rejection-related items.

School Enthusiasm contained elements concerned with child-centeredness (the extent to which the student enjoyed being around, working with, and/or talking to other students) and school enjoyment. Some low-loading items (e.g., 79 -- Do

your friends want to help you?) were retained because they contributed to the child-centered component thereby balancing it with the school-enjoyment component. Otherwise, the items dropped were those that had low factor loadings. Of the final 13 items, 6 dealt with child-centeredness.

Academic Competence items related to the student's academic self-image. The items that had low factor loadings and contributed little to the internal consistency of the scale were dropped. The revised scale consisted of 13 items.

Misbehavior items related to the student's perception of his social behavior. The low-loading items were eliminated in the revision. Items 71 (Are you a bully?) and 40 (Is your work sometimes so hard that you stop trying?) were dropped, even though their loadings were relatively high, because they were ambiguous and did not logically contribute to the scale. Eleven items were retained for the revised scale.

For AYYF(III) the order of items was randomized differently than in AYYF(I) because it was assumed that the AYYF items are independent, that the order of presentation does not introduce a significant response bias, and that the change or elimination of one item does not affect the subject's reponse to other items. The item content of the AYYF(III) scales is presented in Table 6. A copy of the instrument is available in Appendix B.

In summary, the two forms of AYYF compare as follows.

1. The original version (after scale construction) consists of 83 items; the revised form consists of 50 items.
2. The wording of certain items was changed in the revised form, although item substance was unaltered.
3. The order of the items is different in the two versions.

Table 6

Items for Scales of AYYF(III)

Factor I: Isolation/Anxiety	Factor II: School Enthusiasm	Factor III: Academic Competence	Factor IV: Misbehavior
10	40	12	13
37	32	4	18
49	19	27	52
50	16	5	-6a/
44	35	34	22
51	17	38	11
36	42	23	26
28	9	8	24
25	3	41	39
47	20	7	30
45	29	33	48
31	21	14	
43	15	46	

a/ Item reversed for scaling

AYYF(III) Scales

The scales for AYYF(III) were not empirically derived on the basis of data collected using the instrument. Factor analysis was not possible because of the small sample size. The factor structure of AYYF(I) served as the basis for deriving the AYYF(III) scales. It was assumed that the scale structure of AYYF(III) would be similar to that of the empirically derived scale structure of AYYF(I), since

the item content of AYYF(III) was primarily a shortened version of AYYF(I). The AYYF(III) scales were scored using a Likert unit-weighted scaling procedure, as were the AYYF(I) scales. In scoring, items were assigned to the scale on which they loaded on the AYYF(I) factor structure. Responses were scored in the same manner. The range of scores and the 50% agreement scores of each scale in AYYF(III) are given in Table 4.

Confirmation of AYYF(III) Scales

Although the scales for AYYF(III) were not derived empirically, they have been confirmed. The confirmation process involved administration of AYYF(III) to an independent sample, factor analysis of the data from this administration, and comparison of the obtained factor structure with the existing AYYF(III) scale structure. This process is depicted in Figure 1.

AYYF(III) was administered independently to 1,043 elementary-aged normal and EMR students in Indiana (Brown-Smith, Note 1). Data obtained from this sample were factored using a principal components analysis that forced a four-factor solution. The results of this factor analysis (referred to as the obtained factor structure) were compared with the existing AYYF(III) scale structure (referred to as the expected factor structure) using a program developed by Veldman (1967). The program was designed to compare factor structures that have orthogonal reference axes. It compares cosines between the vectors of the separate factor structures and then rerotates one structure to produce maximum contiguity with the other structure. According to Veldman, the matrix of cosines indicates the similarity between the factors of the two structures.

Table 7 presents the cosines between the expected and the obtained AYYF(III) factor structures. The cosines may be interpreted in the same manner as correlation coefficients. The factors listed in Table 5 are numbered according to the order

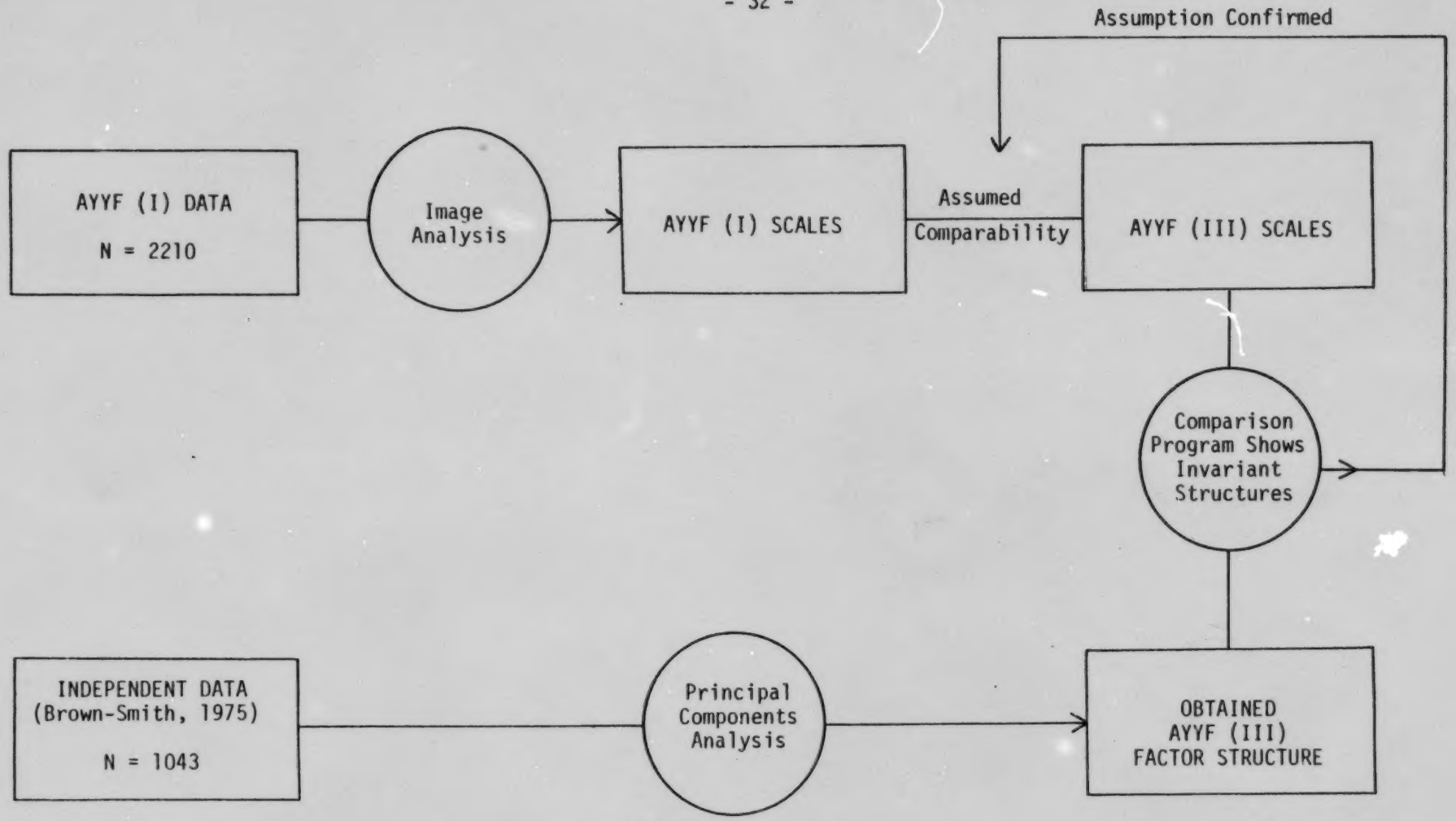

Figure 1. Confirmation Process for AYYF (III) Scales

in which they emerged on their respective factor analyses. The factor that emerged second in the AYYF(I) image analysis emerged fourth in the AYYF(III) principal components analysis. Conversely, the factor emerging fourth on AYYF(I) emerged second on AYYF (III). The extremely high cosine values (all over .96) existing between comparable factors on the two instruments confirm the invariance of the factor structure and permit the conclusion that the psychological constructs measured by AYYF(I) and AYYF(III) are nearly identical.

In summary, the revision of AYYF(I) has resulted in a shorter, clearer, and more precise instrument that can be administered in a shorter time period. Furthermore, it has been established empirically that the revised version has the same scale composition as the original.

Table 7

Cosines Between Factors of Expected and Obtained AYYF(III) Factor Structures

	Obtained factor structure			
Expected factor structure	Scale I: Isolation/ Anxiety	Scale II: Misbehavior	Scale III: Academic Competence	Scale IV: School Enthusiasm
Scale I: Isolation/Anxiety	.9619	.0109	-.1368	.2313
Scale II: School Enthusiasm	-.2419	-.0412	-.0509	.9695
Scale III: Academic Competence	.1196	-.0183	.9885	.0785
Scale IV: Misbehavior	-.0218	.9996	.0148	.0402

Note: Scales are numbered and presented in the order in which they emerged from the factor analyses.

PART III. PSYCHOMETRIC PROPERTIES OF AYYF

Previous parts of this report have described the development of AYYF, an instrument designed to measure students' self-reported attitudes, feelings, and emotions vis-a-vis their school experiences. The primary purpose of Part III is to present all available information on the psychometric properties of both versions of AYYF, including reliability, validity, and normative data. However, measurement instruments, per se, do not possess psychometric properties; these "are properties of test responses, not of tests, and test responses are a function of the person making them and of factors in the environmental setting and measurement context" (Messick, 1975, p. 956). Thus, the reader must understand the context in which the psychometric data was collected in order to evaluate the utility of the instrument. Information on the sample selection process, a description of sample characteristics, and a summary of the administrative procedures are included in this part. Potential users of AYYF should note that if AYYF is administered to a drastically different sample and/or administered under different testing conditions, the psychometric properties reported for the instrument may not be applicable.

This part is organized in three major sections. First, the sampling procedures and nature of the samples are described for both versions of AYYF. Second, the procedures used to administer both versions of AYYF are explained. Third, the reliability and validity of the instrument and its normative data are presented.

The AYYF(I) Sample

Sampling Procedures

Project PRIME was conducted in cooperation with the Texas Education Agency and therefore used students in Texas public schools as a population base. Within the state of Texas, the population of school districts available for the Project

PRIME Year I sample consisted of all school districts and special education cooperatives (districts that had joined together to secure a minimum planning base of 3,000 average daily attendance) that had applied and been selected by the Texas Education Agency to initiate a Comprehensive Education for Exceptional Children Program (Plan A) in their district in either the 1971-72 or 1972-73 school year. These districts were not representative of all Texas school districts; they possessed a high level of administrative initiative, community support, and program capability in the area of special education. A detailed description of Plan A and the state selection process was reported by Kaufman, Semmel, and Agard (Note 2).

A multistage sampling procedure was used to select the school districts, schools, teachers, and students to be included in the study. A brief review of these procedures is necessary for the reader to understand the characteristics of the teacher and student samples. The sampling procedures are fully explicated in Project PRIME -- Interim Report 1971-1972 (Kaufman, Semmel, & Agard, Note 2).

The sampling procedure involved five iterative stages (Figure 2). Stage I was designed to select school districts. Criteria for selection included geographic location, population density, ethnic pattern, and number of handicapped students expected to be integrated. This procedure resulted in the selection of 43 school districts and/or special education cooperatives. Once school districts were selected, Stage II sampling procedures for school building units were implemented. Since generalizations to district or building units were not of interest, sampling procedures did not employ either a proportional or representational methodology. Thus, in terms of school buildings, some districts may be over- or underrepresented. The schools (N=156) were selected to provide the maximum number of integrated EMR students, assure adequate geographic and ethnic representation and provide variation in the types of special education instructional arrangements and student placements.

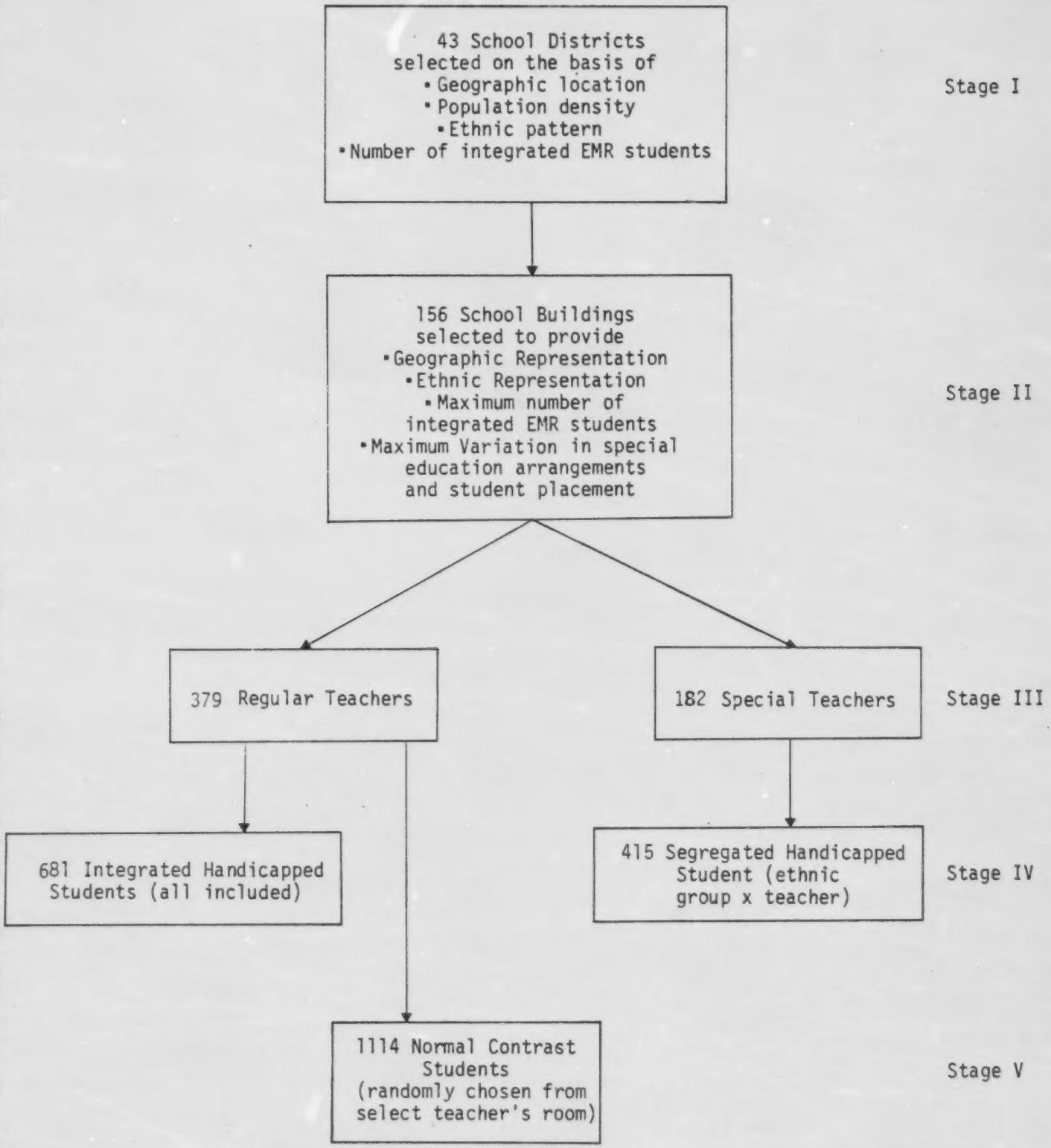
43 School Districts selected on the basis of
• Geographic location
• Population density
• Ethnic pattern
• Number of integrated EMR students
Stage I
156 School Buildings selected to provide
• Geographic Representation
• Ethnic Representation
• Maximum number of integrated EMR students
• Maximum Variation in special education arrangements and student placement
Stage II
379 Regular Teachers
182 Special Teachers
Stage III
681 Integrated Handicapped Students (all included)
415 Segregated Handicapped Student (ethnic group x teacher)
Stage IV
1114 Normal Contrast Students (randomly chosen from select teacher's room)
Stage V

Figure 2. Project PRIME Year I Sampling Procedures

With school districts and buildings selected, the sampling progressed to Stage III, the selection of teachers. A "select teacher" was identified for each EMR, LLD, or MBI student in the third-, fourth-, or fifth-grade age range. Students who were integrated into regular classes more than 50% of the day (referred to as integrated students) were assigned their regular teacher as their select teacher. The regular teacher assigned as an integrated student's select teacher was (a) the teacher he/she saw for the longest period of time or (b) the teacher who instructed in reading and language arts if two or more teachers were seen for the same length of time. Students who were in self-contained special education classes for 50% or more of the day (referred to as segregated students) were assigned a special education teacher as a select teacher.

Once the select teachers were chosen, two different stages were needed for identifying handicapped students (Stage IV) and normal contrast students (Stage V). Stage IV in the sampling procedures concerned selection of integrated and segregated handicapped students. First, all handicapped students who were assigned a select regular teacher in Stage III (i.e., all integrated students) were included in the PRIME sample. Since the districts and school buildings were selected in part on the basis of the number of integrated EMR students, this sampling procedure resulted in the inclusion in the PRIME sample of almost all EMR students who were integrated more than 50% of the day in regular classrooms in the 43 school districts.

Second, handicapped students who were integrated less than 50% of the day (i.e., segregated students) were selected using a stratified random procedure. Specifically, the handicapped students assigned to each select special education teacher were classified by ethnic membership. Then, one student was randomly selected from each ethnic group taught by a given select special education teacher. If a teacher taught only one ethnic group, two students from that ethnic group were selected at random to allow for possible attrition.

The final sampling procedures (Stage V) resulted in the selection of normal contrast students. The normal contrast students were chosen from the select regular teacher's classroom in which the integrated, handicapped students were located. A random number procedure was employed, with one normal student chosen for each handicapped student selected for inclusion in Project PRIME. In addition, one extra normal student was selected per classroom to allow for attrition among the normal contrast students during the year. The normal contrast students can be considered randomly selected representatives of the entire classroom population.

The first three stages of the sampling process resulted in a sample consisting of 561 classrooms selected from 156 elementary schools involved in 43 special education programs (districts or cooperatives). The last two stages resulted in the selection of 1,096 handicapped students (49% of the sample) and 1,114 normal contrast students (51%). These 2,210 students comprised the sample for AYYF(I).

The sampling procedures require careful consideration in order to understand the limitations of the student sample. Since handicapped students were not randomly assigned to different lengths of integration time, no comparability should be assumed between integrated and segregated students. Furthermore, to the extent that placement of handicapped students into regular classrooms is a considered rather than a random process, the normal contrast students in the PRIME sample may not be representative of all normal students. Specifically, handicapped students may have been integrated into low-ability classrooms with the result that the randomly selected normal contrast students from these classrooms would be of low ability. If this situation occurred frequently, the sample of normal contrast students would be biased toward low-ability students.

Sample Characteristics -- Year I

The PRIME Year I sample consisted of 2,210 elementary school students, including normal, EMR, and LLD/MBI[5/] students. Demographic information regarding the sample characteristics is presented in Table 8. Potential users of AYYF(I) are encouraged to compare the characteristics of their populations with the PRIME sample on these dimensions.

Briefly, the most atypical dimensions of the PRIME sample are: (a) the sample included a disproportionate number of Mexican-American students, particularly among the EMR and normal contrast groups (40% and 33%, respectively); and (b) students of low socioeconomic status (SES) were overrepresented, particularly among the EMR students, as indicated by the fact that 81% of the EMR students' fathers had not graduated from high school. As expected, EMR and LLD/MBI students were older than normal students and obtained lower IQ than normal students.

The AYYF(III) Sample

The Project PRIME Year III research consisted of two separate experimental studies (SIS and IBAS) conducted in Texas school districts. All experimental and control subjects in both studies received AYYF(III) as a pretest (N=221). The sampling procedures for the two separate studies are described here briefly, since both studies contributed their subjects to the AYYF(III) sample. In the section describing AYYF(III) sample characteristics, the subjects are treated as one sample.

5/ In PRIME Year I, LLD and MBI were treated as one population.

Table 8

Year I Sample Distribution Statistics by Handicap

Characteristic	Group percentage		
	EMR	LLD/MBI	Normal
Age			
7	*	*	0
8 (2nd-3rd)	3	10	18
9 (3rd-4th)	13	26	29
10 (4th-5th)	22	26	30
11 (5th-6th)	30	24	19
12	23	10	3
13	8	3	*
14	1	0	0
15	*	0	0
Ethnic group			
Anglo	29	73	52
Black	31	10	15
Mexican-American	40	16	33
Other	*	0	*
Father's education			
None	3	2	1
Some grade school	31	6	11
Grade school graduate	16	6	8
Some junior high school	8	3	5
Junior high school graduate	6	2	3

* Less than .5%

Note. Numbers in parentheses indicate approximate grade level for normal students of that age.

Table 8 (cont.)

Year I Sample Distribution Statistics by Handicap

Characteristic	Group percentage		
	EMR	LLD/MBI	Normal
Father's education (cont.)			
Some high school	14	15	16
High school graduate	13	31	28
Business school	2	5	3
Some college	2	9	7
College graduate	2	16	13
Professional	*	5	2
Full Scale IQ			
Less than 50	2	*	0
50-59	17	1	0
60-69	42	3	*
70-79	29	16	10
80-89	7	35	21
90-99	2	25	23
100-109	*	14	20
110-119	0	5	15
120-129	0	0	7
130-139	0	0	3
140 or over	0	0	*
M	67.30	88.38	98.80
SD	9.57	12.48	15.06

* Less than .5%.

Sample Selection Procedures

The Social Interaction Skills (SIS) treatment activities were designed to promote the social competence of handicapped students receiving academic instruction in regular classrooms. Therefore, only school districts having at least 60 EMR students in the third, fourth, and fifth grades integrated into regular classes for at least 50 minutes daily were considered for inclusion in the study. These districts formed the basis for an essentially voluntary selection procedure. Of the seven school districts that qualified under this criterion, five had a sufficient amount of administrative support and assistance to enable them to participate in the study.

From these five school districts, any third-, fourth-, or fifth-grade regular teacher who instructed an EMR student for at least 50 minutes daily was designated as a potentially eligible teacher and was invited to an SIS orientation meeting. More than 101 teachers came to these orientation meetings.

The SIS program research design specified that the SIS program be implemented only in regular classes that included an EMR student with a discernable social problem (acting-out behavior, social withdrawal, or nonparticipation in class). At the beginning of the orientation meeting, teachers were asked to complete the Social Acceptance Nomination Scale (SANS; Agard, Note 3), a questionnaire that identifies students with social adjustment problems in the three areas mentioned above. After completing the SANS, the teachers were provided an explanation of the SIS program and asked if they would like to participate in the SIS study.

Only two districts had at least 15 volunteer teachers, so for administrative feasibility only the teachers from these two districts (N=37) were selected to participate in the SIS program.

The volunteer teachers' responses to the SANS formed the basis for the selection of the EMR students. If a teacher nominated only one EMR student as having a social problem, that student was selected for the sample. If a techer nominated

more than one EMR student, the student with the highest SANS score -- indicating a greater deficit in social ability -- was selected for the sample. For each EMR student, a normal comparison student who exhibited the same social problems as the EMR student and who was of the same sex and ethnicity was selected; and a normal contrast student who was not identified either as having any social problems or as being a social leader, but was of the same sex and ethnicity as the EMR student, was selected. The sample consisted of 37 classrooms, with each classroom containing a triad of sample students -- one EMR student, one normal comparison student, and one normal contrast student. Students in all groups received AYYF(III) as a pretest. Due to attrition, the final sample to which AYYF(III) was administered consisted of 37 EMR students, 29 normal comparison students, and 34 normal contrast students.

The SIS sampling procedures created certain obvious biases in the sample. The EMR sample contains only those students who exhibited one or more social problems. In addition, half of the normal students in the sample demonstrated one or more social problems, and normal students who demonstrated social leadership were excluded. Furthermore, the normal sample matches the EMR sample in terms of sex and ethnicity. Since EMR populations typically consist of proportionately more males and proportionately more non-whites, the SIS normal sample will not reflect typical normal population distributions. The SIS study contributed 100 subjects to the AYYF(III) sample of 221.

The second study, the Instructionally Based Appraisal System (IBAS) study, was confined to one pilot school district, which was selected on the basis of administrative cooperation, personnel support, and a receptivity to educational innovation. The administrative structure of the district consisted of 21 elementary schools divided into three clusters for provision of supportive services; one of the existing clusters of seven schools was selected as the treatment group (partially

because of a cooperative coordinator), and a second cluster of seven schools was chosen as the control group.

Within both the treatment and control clusters of schools, demographic data was collected from pupil records on each handicapped student who was integrated into a regular third-, fourth-, or fifth-grade classroom for at least part of the day and on each segregated student in the third- through fifth-grade age range. Each of the handicapped students on whom demographic data was collected was eligible for inclusion in the study. For IBAS, the handicapped students included were EMR, LLD, MBI, emotionally disturbed (ED), and speech and/or vision impaired (S&VI). A 32-cell matrix was created based upon ethnic group (Anglo, Mexican-American); sex (male, female); type of learning problem (academic, behavioral); integration status and grade (integrated into Grade 3, integrated into Grade 4 or 5, self-contained); and IQ (under 100, 100+). Students were assigned to cells in the matrix based upon these characteristics. The frequency distribution of the matrix served as a guide in forming subgroups of students, since each subgroup had to contain at least 10 students. From the matrix, 10 subgroups were formed. Table 9 describes the subgroups. The first 9 subgroups represent integrated handicapped students; the 10th group represents students placed in a self-contained special class. In the selection of the treatment sample, 8 students were randomly selected from each of the first 9 subgroups, and 12 students were selected from the 10th group.

Students within the control cluster of schools were assigned to 10 subgroups paralleling the subgroups used for treatment students. From each of the first 9 subgroups, 4 students were randomly selected for inclusion in the control group. In addition, 6 students were randomly selected from Group 10.

The stratified, purposive sampling technique resulted in the original selection of 108 integrated and 18 segregated handicapped students for the IBAS sample. The sample selection procedures resulted in a sample that contains certain biases. First,

students not falling into one of the subgroups were not included in the sample; second, even though each subgroup contained a varying number of students, the sample of students from each subgroup was fixed, thus the sample is not proportionate to the true population distribution of demographic characteristics. Because of attrition, the IBAS study contributed 121 students to the AYYF(III) sample.

Table 9

Subgroups for IBAS Sample Selection

Subgroup	Ethnicity	Sex	Type of problem	Integration a/ status & grade	IQ
1.	Anglo	Male	Academic problems	Grade 4-5	100+
2.	Anglo	Male	Academic problems	Grade 4-5	71-99
3.	Anglo	Male	Academic problems	Grade 3	100+
4.	Anglo	Male	Academic problems	Grade 3	71-99
5.	Anglo	Female	Academic problems	Grade 4-5	100+
6.	Anglo	Female	Academic problems	Grade 4-5	71-99
7.	Anglo	Male	Behavior problems	Grade 4-5	100+
8.	Anglo	Male	Behavior problems	Grade 4-5	71-99
9.	Mex.-Amer.	Male	Academic problems	Grade 4-5	all IQ
10.	Mixed	Mixed	Academic problems	Self-contained	60-99

a/ Grade indicates the grade level into which the integrated students were placed.

Sample Characteristics -- Year III

The PRIME Year III sample consisted of 221 selected elementary school students, including 63 normal (29%), 37 EMR (16%), 75 LLD (35%), 14 MBI (6%), 20 ED (9%), and 12 S&VI (5%) students. Of the 221 Year III sample students, 214 completed AYYF(III). Demographic information regarding the sample characteristics is presented in Table 10.

Because of the small sample size, the demographic nature of the districts from which PRIME sampled, and the nonrandom nature of the sampling procedure, the Year III sample is atypical in several repects. First, Black students are overrepresented in the EMR and normal groups, but not represented at all in the other handicapped groups. Second, Mexican-Americans are overrepresented in EMR, MBI, and normal groups. The normal group, it should be noted, contains only 3% Anglo students, a gross underrepresentation. Males are overrepresented in all handicapped groups except the EMR group.

Administrative Procedures

The administrative procedures developed for use with AYYF are thoroughly documented in the Test Administrator's Handbook (Agard, & Mabry, Note 4), a Project PRIME research document distributed to the PRIME test administrators. To ensure uniformity of PRIME research testing conditions, each test administrator was instructed to adhere to the procedures described in the Handbook as closely as possible. A brief description of the procedures used in collecting PRIME research data follows. For other AYYF users, suggested administrative procedures may be found in the User's Manual.

AYYF was designed to be administered and scored by a person with skill and experience in managing small groups of students. Testers had received at least one day of training in administering the PRIME instruments. AYYF was administered to small, manageable groups consisting of about six students. The groups were mixed in terms of sex, classroom assignment, grade level, and type of handicap.

Table 10

Year III Sample Distribution Statistics by Handicap

Characteristic	Group percentage					
	EMR	ED	LLD	MBI	S&VI	Normal
Age						
6	0	0	1	0	0	0
7	0	0	0	7	0	0
8	8	0	17	14	25	6
9	16	25	35	21	25	32
10	22	50	35	50	42	32
11	19	25	7	7	8	23
12	19	0	5	0	0	6
13	16	0	0	0	0	0
Ethnicity						
Anglo	3	90	84	64	92	3
Black	39	0	0	0	0	36
Mexican-American	55	10	16	36	8	60
Other	3	0	0	0	0	0
Sex						
Male	59	100	73	71	83	57
Female	41	0	27	29	17	43
IQ[a/]						
less than 50	0	0	0	0	0	N/A
50-59	16	0	0	0	0	N/A
60-69	58	0	3	15	0	N/A

a/ IQ data were not available for the normal subgroup.

Table 10 (cont.)

Year III Sample Distribution Statistics by Handicap

Characteristic	Group percentage					
	EMR	ED	LLD	MBI	S&VI	Normal
IQ[a] (continued)						
70-79	23	0	10	38	17	N/A
80-89	0	5	22	23	8	N/A
90-99	0	42	30	23	17	N/A
100-109	3	26	16	0	25	N/A
110-119	0	16	12	0	33	N/A
120-129	0	10	7	0	0	N/A
130-139	0	0	0	0	0	N/A
140 or over	0	0	0	0	0	N/A
M	66.40	102.88	95.50	79.9	99.40	N/A
SD	9.17	10.85	14.73	10.12	14.52	N/A

Note. SES data were not collected for Year III.

a/ IQ data were not available for the normal subgroup.

The PRIME testers were instructed to create a pleasant testing environment by putting the students at ease and maintaining a friendly attitude so that the students would feel comfortable and free to vocalize any questions. No teachers were present during testing, and testing was usually conducted in a classroom with outside distractions minimized. The test was designed to be administered in 30-minute sessions, but there was no time limit. Students were given ample time to listen and respond to each question. AYYF(I) was administered in two parts, Items 1 through 25 and Items 26 through 52. Each part was administered in its entirety during one testing session. AYYF(III) was administered in one 30-minute session.

In administering AYYF, the tester first read the introductory instructions to the students. Then an opportunity was provided for students to ask questions about the instructions. The tester was permitted to reword the instructions, provide additional sample items, and/or use visual aids such as the blackboard.

The test administrator read the items to the students one at a time, giving ample time for each student to respond by writing "yes" or "no" on the answer sheet. Testers preceded each question with the number and letter designation that identified the proper response space on the pupils' answer sheets; extreme care was taken to ensure that the student responded in the appropriate space. If a student refused to respond to any question, the tester asked him/her to "choose the answer you think it is most of the time." If the student still refused to answer, he/she was permitted to omit the question. If a student showed signs of embarrassment or uneasiness over a given question, he/she was permitted to omit the question.

Testers were directed to encourage the students to ask questions about any words that they did not understand. The testers circulated about the group during the testing session in order to aid students who had difficulty understanding items, even if the student did not specifically bring his/her problem to the tester's attention. If a student did not understand a given question, the tester was permitted to define any particular word or provide a synonym but was not permitted to paraphrase an entire question.

Precautions were taken to ensure that Spanish-speaking students who were not fluent in English understood the testing instructions and item content. As an aid for the administration of AYYF(I), test administrators were supplied with a Spanish translation of AYYF(I). This was to be used as a guideline for translating individual items into Spanish for Mexican-American students. AYYF(I) was only rarely administered entirely in Spanish; rather, bilingual testers provided the students with Spanish translations of items whenever necessary.

A complete Spanish translation was not developed for AYYF(III). Almost all of the Year III testers were bilingual Mexican-American (six out of seven), and the testers were instructed to answer any questions about the meaning of an item or to translate the item into Spanish if a student had difficulty understanding it. The one tester who lacked fluency in Spanish was not used to test students from classes designated as bilingual.

Reliability

The data collected on AYYF(I) was subjected to the factor analysis and scaling procedure detailed in Part II. This process resulted in the delineation of four scales: Isolation/Anxiety, School Enthusiasm, Academic Competence, and Misbehavior. Reliability estimates of these four scales were obtained through an internal consistency analysis. The alpha coefficient obtained from the internal consistency analysis estimates how well the obtained score represents a universe, or true, score (Cronbach, 1970).

For AYYF(I), the alpha coefficients of internal consistency were computed separately for the normal, EMR, and LLD samples, as well as for the total sample; for AYYF(III), alpha coefficients were computed only for the total sample (see Table 11).

The alpha coefficients obtained for each AYYF(I) scale for the total sample and for the normal and LLD/MBI samples were all above .75, indicating that the scales possess acceptable reliability. The alpha coefficients obtained for all AYYF(I) scales for the EMR sample, although acceptable, are slightly lower (.69 to .82) than the alpha coefficients obtained for the other three samples, indicating that the reliability of the scales for the EMR population is slightly weaker.

The alpha coefficients obtained for the total sample for each AYYF(III) scale were comparable to AYYF(I) for Isolation/Anxiety and Misbehavior, but the AYYF(III) alpha coefficients were lower for School Enthusiasm and Academic Competence.

However, given the drastic reduction in the number of items in these two scales, a modest decrease in the alpha coefficient is not surprising. The alpha coefficients for AYYF(III) indicate that although the AYYF(III) scales are shorter, they possess acceptable reliability.

The internal consistency reliability estimates are based on a single administration of each of the instruments. The alpha coefficient provides an estimate of the extent to which the scale score obtained under one administration represents a universe score; it does not provide any indication of the stability of the scales. Because AYYF(I) and AYYF(III) were administered only once, estimates of reliability or stability across testing conditions, time intervals, and/or alternate test forms are not available.

Validity

Instrument validation, defined as the examination of the accuracy of inferences made from scale scores (Cronbach, 1971), has been cited as the most critical concern in test development and evaluation (Loevinger, 1957; Messick, 1975). For AYYF, the validation process examines the accuracy of the instrument scales in measuring a student's perception of the degree to which he/she possesses certain hypothesized traits. The principal validity problem for AYYF, then, is one of construct validation, i.e., the establishment of a link between a particular AYYF scale and the more general theoretical construct it is intended to measure.

The process of construct validation marshals evidence that theoretically relevant and observable relationships exist to support the inference that a set of observed responses (a scale score) has a particular meaning (Messick, 1975). Construct validation involves first, determining whether a scale score measures something systematic, and second, establishing that the particular meaning assigned to that score is appropriate (Loevinger, 1957). Construct validity has three mutually exclusive, exhaustive,

and mandatory components: content representativeness, structural soundness, and nomological network strength (Loevinger, 1957).

Content Representativeness

Content representativeness concerns the extent to which the trait presumed to be measured by a scale is accounted for by the item content of the scale. This accounting involves examining the breadth and the appropriateness of the item content.

Table 11

Alpha Coefficients for AYYF

	AYYF(I)				AYYF(III)
Scale	Total	Normal	EMR	LLD	TOTAL
Isolation/Anxiety	.76	.77	.71	.75	.80
School Enthusiasm	.84	.83	.82	.88	.74
Academic Competence	.82	.83	.79	.86	.73
Misbehavior	.77	.77	.69	.80	.78

Loevinger (1957) suggests that three processes are involved in establishing content representativeness: first, determining whether the item pool reflects the content areas commonly thought to comprise the trait; second, determining whether the most appropriate items from the pool were selected for the test and determining the appropriateness of the test design and administrative procedures; and third, examining the empirical justification provided for the selection of the set of items used in the final scoring of the scale. A fourth process, suggested by Cronbach (1971), examines the appropriateness of the criteria used to select the scale names.

Item Pool. The AYYF items were drawn from an item pool created from existing personality questionnaires that have well-established content validity. The item pool was designed to reflect as many aspects of each trait as possible (Table 1, p. 7). It was then reviewed for content breadth and appropriateness by educators and psychologists.

Item selection and instrument design. The development of AYYF (including the item selection and modification, the response format design, and the specification of administrative procedures) was premised on two considerations: content appropriateness and reduction of irrelevant difficulty. Cronbach (1970) suggests that these are important considerations in the establishment of construct validity. The development process was described in detail in Section II and is highlighted below.

Items were selected from the pool to represent the subconstructs shown in Table 1 (p. 7). The selected items were reviewed and, if necessary, modified to assure linguistic and cognitive simplicity. The binary, forced-choice question format, the design of the answer sheet, and the procedure of reading the items to the respondents were aspects of the instrument design intended to reduce the psychological difficulties associated with responding.

Scoring. Once the selected items had been administered, the AYYF scales were derived empirically using a factor analysis technique. An item was included in the score of the scale on which its obtained factor loading was the highest. An alpha analysis procedure was used to identify items that reduced the internal consistency of the scale; those items were not included in the score.

Scale names. A name was selected for each scale through intensive scrutiny of each item on the scale. A name that closely reflected item content yet did not possess more inferential, evaluative, or restrictive meanings than was implied by the items was selected for each scale.

In summary, the use of these procedures in the development of the AYYF scales provides evidence for the content representativeness of each of the scales.

Structural Soundness

Structural soundness is evidenced by the existence of cohesive relationships among scale items and a strong parallel between the instrument scales and conceptually defined structural manifestations of the traits being measured (Loevinger, 1957). In considering the structural soundness of AYYF, two issues are of concern: first, the items selected for AYYF should yield distinct, coherent, interpretable response sets, and second, there should be agreement between the hypothesized or conceptually defined traits included in the instrument content and the instrument's empirically derived structure.

Cohesive response sets. The fact that definitive factors emerged from the factor analysis of AYYF provides evidence for its structural soundness. Furthermore, the alpha analysis results suggest that the response sets possess adequate internal consistency; that is, the items on each scale all measure the same psychological phenomenon. These two analyses show that AYYF consists of separate, well-defined, and coherent structural elements.

Relationship of hypothesized to obtained instrument structure. A close parallel exists between the empirically derived scales and the four personality dimensions that AYYF was intended to measure (Figure 3). Although the scale names are more limited and behavior-specific than the original, more global personality constructs of the hypothetical model, they bear a close relationship to the hypothesized model.

Figure 3

Comparison of Hypothesized and Empirical Structures of AYYF

HYPOTHESIZED CONSTRUCTS	ACADEMIC COMPETENCE	SOCIAL COMPETENCE	PERSONAL ATTITUDES	PSYCHOEMOTIONAL
HYPOTHESIZED SUBCONSTRUCTS	Academic self-concept Self-direction Achievement motivation	Loneliness Behavioral self-concept Misbehavior	Attitude toward school Attitude toward teacher	Loss of control School anxiety Social anxiety Outgoingness
Number of items hypothesized	28	27	12	16
EMPIRICAL SCALES	Academic Competence	Misbehavior	School Enthusiasm	Isolation/Anxiety
Number of hypothesized items loading on scale	20	12	12	10
Number of hypothesized items loading on different scale	8	15	0	6
Number of new items loading on scale	1	1	18	9
Total number of items loading on scale	21	13	30	19

Furthermore, the comparison of the intended placement of specific items with their empirical factor loading reveals that most items loaded most highly on the empirical scale that paralleled the hypothesized construct the item was intended to represent. The major exceptions were: (a) eight items selected to represent the achievement motivation subconstruct of the hypothesized academic competence construct loaded on the School Enthusiasm scale; (b) five items selected to represent the peer acceptance subconstruct of the hypothesized social competence construct loaded on the School Enthusiasm Scale; (c) five items intended to represent the outgoingness subconstruct of the hypothesized psychoemotional states construct loaded on the School Enthusiasm Scale; (d) nine items selected to represent the loneliness subconstruct of the hypothesized social competence construct loaded on the Isolation/Anxiety scale. Thus, only 27 of the 83 items loaded on scales other than those hypothesized.

In summary, AYYF appears to be structurally sound as evidenced by the structural simplicity and cohesiveness shown by the factor and alpha analyses and the resultant correspondence existing between the empirical and hypothesized structural models.

Nomological Network Strength

Nomological network strength is determined by the extent to which a particular conceptual interpretation or construct name given a scale is supported by a strong interlocking system of theoretical inferences that can be justified by empirical observation (Cronbach & Meehl, 1955; Campbell, 1960). It is the strength of this network that forms the empirical basis for establishing the psychological meaning of the scale. Determining the strength of the nomological network surrounding a construct involves a continuous process of establishing and expanding the system of empirically verified relationships incorporating that construct. This report

concentrates on four sets of network interrelationships[6/] that have specific relevance for a validity investigation:

* establishing the extent to which the AYYF self-report constructs provide accurate measures of self-preceptions,
* establishing the extent to which the AYYF self-report constructs are supported by external perceptions of the same traits,
* establishing the extent to which the teacher, peer, and other self-report constructs contribute to the determination of AYYF constructs, and
* establishing the extent to which the AYYF self-report constructs are able to differentiate groups.

The complete nomological network (theoretical model and multivariate analyses) incorporating the four constructs measured by AYYF(I) will be available in the final report of Project PRIME, Mainstreaming: Learners and Their Environments (Kaufman, Agard, & Semmel, Note 5).

Comparison of AYYF Constructs with Other Self-Report Measures. To investigate the accuracy of the AYYF constructs as measures of a student's self-perceptions, two relationships were examined:

* the interrelationships among the self-perceptions of the traits measured by AYYF(I), and
* the relationship between the attitude scale from AYYF(I) and similar constructs from other self-report scales.

Self-concept theory (McCandless, 1973) suggests that normal children should show a high degree of consistency in their self-ratings on those traits that are

6/ The relationships presented in this section are based on data from normal and EMR students. Parallel analyses using LLD/MBI students were not conducted because the LLD/MBI sample is small, disproportionately male, and includes two different categorical groups, each having a separate body of literature. Users who wish to use the instrument with LLD and/or MBI students may request further information from the test developers.

assumed to comprise self-concept. The interrelationships among the scales of AYYF(I) have been presented earlier (Table 5, p. 26). For normal students, the absolute values of the intercorrelations among the three trait self-perceptions, Isolation/Anxiety, Academic Competence and Misbehavior, are all in the .30's. For retarded students, only the two social self-perceptions, Isolation/Anxiety and Misbehavior, are related (r = .40); there is no relationship between academic and social self-perceptions. These intercorrelations, although due in part to artifacts created by the scoring procedure, provide evidence for the appropriateness of the Academic Competence, Misbehavior and Isolation/Anxiety Scales as measures of self-perception.

The relationship between School Enthusiasm, the only attitude construct measured by AYYF, and attitude measures from other self-report instruments are presented in Table 12. The AYYF(I) School Enthusiasm Scale is correlated with scales from HDYF-I, a student self-report instrument administered concurrently with AYYF(I), and HDYF-II, a retrospective self-report instrument administered three months after AYYF(I). The correlation between School Enthusiasm and HDYF-I Attitude toward School Activities was .56 for normal students and .41 for EMR students. This correlation is close to the maximum possible as determined by the product of the scales' separate reliabilities (.70 for normal students, .66 for EMR students). These high correlations take on additional importance when considering that the HDYF-I scale is different in content from AYYF(I) and uses a different response format -- a forced choice, three point response (happy, plain and sad faces) to a description of a school related event (e.g., the teacher comes to your desk) followed by a question ("What is your face like?").

The scales of HDYF-II all measure attitude toward specific school-related variables. For normal students, these measures all correlate about .34 with AYYF(I) School Enthusiasm; for retarded students the correlations are in the low

.20's with the exception of the EMR students' correlation between HDYF-II Attitude Toward Reading and AYYF(I) School Enthusiasm (.13). From the correlations summarized in Table 2 (p. 21), evidence is available for the appropriateness of the AYYF(I) School Enthusiasm scale as a measure of an attitude toward school construct although the evidence is stronger for normal than for EMR students.

Comparison of AYYF Constructs with External Measures. The PRIME instruments were designed to measure student behavior from different perspectives: self, teachers', peers', and independent observations. Each of these sources imposes a different meaning on a particular set of individual behaviors. For example, when a trait such as academic competence is being assessed, a student's view of his/her own academic competence may incorporate different aspects of academic behavior than those considered by teachers or peers. This difference in perspective (self versus external), results in the measurement of different constructs.

Because the AYYF scales and the scales from external measures represent different constructs based on different perpectives of the same trait, we would not expect complete agreement among these measures. However, we do expect self-perceptions to be grounded in reality to some extent, particularly since self-concept theory suggests that self-perceptions are derived from the feedback one receives from significant others (Mead, 1934); in this case, significant others would be teachers and peers. Since observer ratings and achievement test scores are rarely communicated to the student, it could be assumed that measures derived from these sources would be less related to self-perceptions than teacher and peer ratings. Furthermore, research evidence (Bialer, 1970) has suggested that retarded students have unrealistic self-perceptions. Thus, we would expect less agreement between self- and external ratings for retarded students.

Table 12

Correlations Between School Enthusiasm and Comparison Constructs

Comparison Constructs	Group	
	Normal students	EMR students
HDYF-I		
Attitude toward School Activities	.56	.41
HDYF-II		
Attitude toward Friends	.33	.22
Current Attitude toward Teacher/ School	.33	.21
Attitude toward Reading	.34	.13
Attitude toward Mathematics	.34	.23

Note. n = 824 for normals; 557 for EMRs. All correlations are significant ($p < .01$).

The relationships between self-perceptions and external perceptions based on overt behavior are presented in Table 13. External sources included teachers' ratings from the Teacher Rating Scale (TRS), peer nominations from Guess Who (GW), direct observation from the Indiana Behavior Management Schedule (IBMS) and The Florida Classroom Climate and Control System (FLACCS) and objective testing from the Metropolitan Achievement Test (MAT).

For the AYYF(I) self-report of Isolation/Anxiety, correlations with the teachers' ratings of Anxiousness were .22 for normal students and .13 for EMR students.

AYYF(I) Academic Competence is correlated .29 with teacher ratings of Academic Effort and Proficiency and .26 with peer ratings of Brightness for normal students. For retarded students, the pattern of correlations is similar but

lower. Confirming expectations, correlations with actual achievement test scores are lower than the correlations with teacher and peer ratings.

The AYYF(I) self-report of misbehavior correlates .37 and .30 with teacher and peer ratings of antisocial and disruptive behavior for normal students and .24 and .13 with the same scales for EMR students. Among normal students, AYYF(I) Misbehavior has negative correlations (in the low -.20's) with GW Quietness/Good Behavior and IBMS On-Task Behavior observer ratings, but the correlations for the EMR students, while in the same direction, are not as high.

In summary, the self-perceptions students hold of the traits of isolation/anxiety, academic competence, and misbehavior are related to teacher and peer perceptions of these traits. The relationships to external sources, however, are stronger for Misbehavior than for Academic Competence and Isolation/Anxiety. As expected, the relationships between self- and external perceptions of each trait are stronger for normal than retarded students. Furthermore, teacher and peer ratings are more closely related to student self-perceptions than are observer ratings or standardized tests.

The comparative strength of teacher, peer, and other self-report measures in predicting self-perception and attitude scores. Theories of the development of attitudes and self-concept lead us to expect that measures of student attitudes and self-perceptions would be more related to other self-report measures than to either teacher or peer ratings, and more related to teacher and peer ratings than to objective tests. To investigate the comparative strength of the relationship between these various sources and the AYYF(I) constructs, a series of regression analyses were conducted, predicting each AYYF(I) construct from (a) student background, (b) objective tests, (c) other self-reports, (d) teacher's ratings and (e) peer nominations.

The analyses employed an extension of multiple regression known as commonality analysis. Commonality analysis apportions predictable criterion variance ($\underline{R}^2$) into independent and joint contributions of the multiple predictor sources. A predictor source may consist of only one variable or a set of variables. The total variance of any predictor set is the variance explained by the set before the variance shared with other sets is partialled out. The unique variance is the variance explained by the set after all variance from other sets is partialled out. The unique contribution is equal to the decrease in $\underline{R}^2$ that results when the last source is deleted from the regression equation. The sum of these contributions will normally be less than the total $\underline{R}^2$. Thus, the remaining criterion variance is explained by predictive variance shared by two or more sources. Commonality analysis identifies the criterion variance associated with all combinations of predictor sources as well as their unique contributions (Veldman, Note 6). A complete description and critique of the method is provided by Kerlinger and Pedhazur (1973) and Mayeske et al. (1972).

Table 13

Correlations between AYYF(I) Scales and Comparison Constructs

Comparison Scale	Group	
	Normal Students	EMR Students
Isolation/Anxiety		
TRS Anxiousness (teacher rating)	.22	.13
Academic Competence		
TRS Academic Effort/Proficiency (teacher rating)	.29	.14
GW Brightness (peer rating)	.26	.08
GW Dullness (peer rating)	-.17	-.09
MAT Reading (standardized test)	.16	-.04 (ns)
MAT Math (standardized test)	.13	-.05 (ns)
Misbehavior		
TRS Antisocial Behavior (teacher rating)	.37	.24
GW Disruptive Behavior (peer rating)	.30	.13
GW Quiet/Good Behavior (peer rating)	-.21	-.07
IBMS On-Task Behavior (observation)	-.24	-.13
IBMS Aggression/Resistance (observation)	.10	.11
FLACCS Negative Social Behavior (observation)	.14	.08

Note. n for normal students = 853 for teacher and peer measures; 445 for observation measures. n for EMR students = 556 for teacher and peer measures; 559 for observation measures. All correlations are significant ($p < .01$) unless marked (ns).

The results of the commonality analyses predicting each AYYF(I) construct for normal students are presented in Table 14; results for retarded students are presented in Table 15. For each AYYF construct, the total variance explained (R^2) by the complete equation and the total and unique variance explained by each predictor set are provided. As can be seen from the total R^2, with the exception of Isolation/Anxiety, predictor sets explain between 40-50% of the variance in each of the AYYF(I) constructs for normal students and between 20-30% for retarded students. For both

normal and EMR students, the strongest predictor set for each construct except Isolation/Anxiety is the set of other self-report measures. Only for Academic Competence among normal students does the predictive power of objective tests approach the predictive power of teacher or peer ratings. These results suggest that the AYYF(I) constructs exist within a strong, predictable network of relationships with other perception and attitude measures and with teacher and peer ratings.

The Ability of AYYF(I) Scores to Discriminate Groups. Assessing network strength through group discrimination involves investigating the power of the AYYF(I) scales to differentiate subgroups of students in a manner consistent with past research.

Previous research on the constructs measured by AYYF provides evidence for expected differences based on sex and handicap status; therefore, establishing the strength of the network for the AYYF scales required comparing the scores of males and females and retarded and normal students on each of the AYYF(I) scales to determine whether these subgroups differed in the predicted direction. For each AYYF(I) scale, a two-way analysis of variance (ANOVA) was computed using type of handicap (EMR, normal) by sex (M, F) (Table 16). In the section that follows, the ANOVA results for each scale score are compared with the results from past research to establish the strength of the network for that scale.

Based on past research, it would be expected that EMR students would report more feelings of isolation and anxiety than their normal peers. Many studies have reported that EMRs have low sociometric status and are social isolates (Dentler and Mackler, 1962; Jordan, 1966; Meyerowitz, 1962); and a few studies have shown that EMR students are aware of peer rejection. Carroll (1967), in a comparison of self-concept categories, found that one of the areas in which EMR students exhibited the highest number of self-derogations was perceived rejection by peers. In addition,

Zigler and Harter (1971) have noted that the general literature suggests that retarded students as a group demonstrate a higher level of anxiety than normal students.

The results of the ANOVA for the Isolation/Anxiety scale show that EMR students reported a significantly greater amount of anxiety and social isolation than their normal peers ($p < .0001$). This finding provides evidence for the strength of the network of the Isolation/Anxiety scale.

Past research on school enthusiasm would lead to the expectation that normal students would report more school enthusiasm than EMR students and that girls would be more enthusiastic than boys. Giles (1969), in a survey of attitudes toward school, reported that EMR students in a self-contained class had a less positive attitude toward school than their normal peers. Giles also reviewed several studies concluding that girls, regardless of grade level, report more satisfaction with school than boys.

School enthusiasm is a composite of many affective characteristics: attitude toward teachers, academic competence, the extent to which a student likes being around his/her peers, and whether a student likes the school environment. Since retarded students have fewer friends, are more socially isolated, misbehave and therefore get reprimanded more, and have lower academic self-concepts, one would expect them to enjoy school less than normal students.

The results of the ANOVA of the School Enthusiasm scale indicate that EMR students report significantly less school enthusiasm than normal students ($p < .0001$) and that girls report significantly more school enthusiasm than boys ($p < .0001$). This finding provides evidence for the strength of the network of the School Enthusiasm scale.

Table 14

Total and Unique Variance Explained
by Predictor Sets for AYYF(I) Scales, Normal Students

AYYF(I) Scale	Predictor Sets				
	Background	Objective Tests	Self-Reports	Teacher Ratings	Peer Nominations
Isolation/Anxiety (.28**)					
Total	.03	.07*	.11**	.12**	.13**
Unique	.01	.01	.05	.05**	.06**
School Enthusiasm (.53***)					
Total	.09	.01	.47***	.06**	.11**
Unique	.01	.00	.37***	.01	.02
Academic Competence (.38***)					
Total	.08	.16**	.26***	.13**	.10**
Unique	.02*	.03**	.13***	.01	.01
Misbehavior (.41***)					
Total	.12	.06*	.23***	.14**	.16**
Unique	.03**	.02	.12***	.03**	.03*

Note. n = 296. Numbers in parentheses indicate total R^2 for each scale.

* $p < .05$
** $p < .01$
*** $p < .001$

Table 15

Total and Unique Variance
Explained by Predictor Sets for AYYF(I) Scales,
EMR Students

AYYF(I) Scale	Predictor Sets				
	Background	Objective Tests	Self-Reports	Teacher Ratings	Peer Nominations
Isolation/Anxiety (.15**)					
Total	.02	.01	.06*	.07*	.06**
Unique	.01	.00	.05	.02	.01
School Enthusiasm (.35***)					
Total	.05	.04	.32***	.03*	.03
Unique	.01	.00	.23***	.01	.01
Academic Competence (.27***)					
Total	.02	.00	.15**	.09**	.10**
Unique	.02	.01	.12***	.01	.03
Misbehavior (.23***)					
Total	.05	.03	.14**	.08**	.06**
Unique	.01	.01	.10**	.02	.02

Note. n = 346. Numbers in parentheses indicate total R^2 for each scale.

* $p < .05$
** $p < .01$
*** $p < .001$.

Table 16

Summary of ANOVA Results for
AYYF(I) Scales by Sex and Handicap

Group	AYYF(I) Scale			
	Isolation/Anxiety	School Enthusiasm	Academic Competence	Misbehavior
	Group Means			
Normal				
Male	27.1	53.2	35.0	16.8
Female	26.9	55.4	35.3	15.1
EMR				
Male	28.2	52.7	34.8	18.0
Female	30.0	53.5	34.1	17.1
	Chance Probabilities of ANOVA Results[a/]			
Handicap	.0001	.0001	.0003	.0001
Sex	---	.0001	---	.0001

a/ Although the Sex x Handicap interactions were obtained and were statistically significant, they are not included because there was no past research that would support an interaction hypothesis and an examination of the means suggested the differences were not educationally important.

On the basis of past research, it would be expected that EMR students would report a lower sense of academic competence than their normal peers. Mercer (1971) has cited low academic competence as one of the prime characteristics that contribute to the identification of an EMR student. MacMillan and Keogh (1971) concluded that expectancy of failure is characteristic of retarded students and Zigler and Harter (1971) noted that because of a general failure expectancy, retarded students are likely to develop a sense of inferiority regarding their school performance. Indeed, a prevalent rationale for placing EMR students in special classes is that their high rate of failure in regular classes leads to devalued self-concepts and chronic failure (Mayer, 1966).

The ANOVA results for the Academic Competence scale show that the normal students reported a significantly higher sense of academic competence than the EMR students ($p < .003$). This finding provides evidence for the strength of the network of the Academic Competence scale.

On the basis of past research on misbehavior, EMR students would be expected to report that they misbehave more than normal students. Zigler and Harter (1971) have found that persons labeled retarded have a higher incidence of disruptive, disturbing social behavior. Wilson (1970) noted that one reason retarded students are not generally accepted is because their behavior is often bothersome, inappropriate, or antisocial behavior (including fighting and misbehaving). Gardner (1966) has concluded that there is a higher rate of personal and social adjustment problems among EMR students.

It has also been noted that elementary school boys misbehave more frequently than girls; in disproprotionate numbers, boys are the delinquents and rebels in this age range (Stacey, Bereaud, and Daniels, 1974). Many researchers have noted that young girls are much more likely to conform to social standards than boys (Bardwick, 1971; Douvan, 1960); thus, boys, being less subject to pressures to be a "good child", are more likely to disobey school rules and misbehave.

The results of the ANOVA of the Misbehavior scale indicate that EMR students reported significantly higher self-perceptions of misbehavior than normal children ($p < .0001$) and boys reported a significantly higher self-perception of misbehavior than girls ($p < .0001$). These findings provide evidence for the strength of the network of the Misbehavior scale.

Summary of Validation Evidence

A summary of the construct validation findings is presented in Table 17. Various forms of evidence have been presented for the construct validation of the

AYYF scales. First, the content representativeness was established through an examination of the instrument development procedures.

Second, the structural soundness of the instrument was established by demonstrating that definitive, internally consistent scales were derived from a factor analysis of the instrument and that the composition of all four empirically derived scales were similar to the hypothesized model, although the similarity was greater for the School Enthusiasm, Misbehavior, and Academic Competence Scales than for Isolation/Anxiety.

Third, the nomological network strength was established by examining the relationships existing between AYYF scales and other constructs. When AYYF scales are compared with other self-report measures for normal students, the relationship is strong for the School Enthusiasm and moderate for Isolation/Anxiety, Academic Competence, and Misbehavior. Among EMR students, the network strength is moderate for School Enthusiasm and weak for the other three constructs. When AYYF scales are compared with external estimates of the same trait, the relationship is strongest for Misbehavior, less strong for Academic Competence, weak for Isolation/Anxiety and not available for School Enthusiasm.

When both self-report and external ratings were included in a multiple regression model, it was possible to account for a large proportion of the variance. The variance explained was greater for School Enthusiasm and Misbehavior than for Academic Competence and Isolation/Anxiety. As expected, self-report measures predicted more variance than did external measures.

Network strength was also established by demonstrating that each of the AYYF scales differentiated subgroups in the predicted directions. Each scale produced expected differences between EMR and normal students' scores, and two scales, School Enthusiasm and Misbehavior, produced expected differences between the scores of males and females.

Table 17

Summary of Validity Evidence for AYYF(I) Scales

Type of Validity	Method of Investigation	AYYF(I) Scale							
		Isolation/Anxiety		School Enthusiasm		Academic Competence		Misbehavior	
		Normal	Handicapped	Normal	Handicapped	Normal	Handicapped	Normal	Handicapped
Content Representativeness	Instrument development procedures	strong	strong	strong	strong	strong	strong	strong	strong
Structural Soundness	Factor analysis internal consistency	moderate	moderate	strong	strong	strong	moderate	moderate	moderate
	Relationship to hypothesized constructs	weak	weak	moderate	moderate	moderate	moderate	moderate	moderate
Network Strength	Correlation of scales with other self-report scales (including other AYYF scales)	moderate	weak	strong	moderate	moderate	weak	moderate	weak
	Correlation of scales with external report scales	moderate	weak [a/] [a/]	not available		moderate	weak	strong	moderate
	Prediction of scales from self-report & external ratings	moderate	weak	strong	moderate	moderate	moderate	strong	moderate
	Ability of scale scores to differentiate subgroups	strong	strong	strong	strong	strong	strong	strong	strong

a/ Comparison scales not highly similar.

Table 17

Summary of Validity Evidence for AYYF(I) Scales

Type of Validity	Method of Investigation	AYYF(I) Scale							
		Isolation/Anxiety		School Enthusiasm		Academic Competence		Misbehavior	
		Normal	Handicapped	Normal	Handicapped	Normal	Handicapped	Normal	Handicapped
Content Representativeness	Instrument development procedures	strong	strong	strong	strong	strong	strong	strong	strong
Structural Soundness	Factor analysis internal consistency	moderate	moderate	strong	strong	strong	moderate	moderate	moderate
	Relationship to hypothesized constructs	weak	weak	moderate	moderate	moderate	moderate	moderate	moderate
Network Strength	Correlation of scales with other self-report scales (including other AYYF scales)	moderate	weak	strong	moderate	moderate	weak	moderate	weak
	Correlation of scales with external report scales	moderate	weak [a/] [a/]	not available		moderate	weak	strong	moderate
	Prediction of scales from self-report & external ratings	moderate	weak	strong	moderate	moderate	moderate	strong	moderate
	Ability of scale scores to differentiate subgroups	strong	strong	strong	strong	strong	strong	strong	strong

a/ Comparison scales not highly similar.

In general, the validity evidence is stronger for the Misbehavior, School Enthusiasm, and Academic Competence scales than for Isolation/Anxiety and is stronger for the normal students than it is for the EMR students. These validation findings suggest that AYYF is a self-report instrument worthy of consideration by users wishing to obtain student self-perceptions of the four traits considered in the instrument. The validity evidence is based on aggregated data and does not support the use of the instrument for diagnostic purposes without other supportive assessment techniques. Users should be aware that the estimation of validity is a subjective procedure related to the intended use of the instrument. Users are encouraged to judge the validity evidence presented here in terms of the specific applications they have in mind.

All of the validity evidence presented in this section has been relevant to AYYF(I). The small sample used for the administration of AYYF(III) has prohibited investigating its validity in a similar manner. However, because of the strong simliarity of the factor structures of AYYF(I) and AYYF(III) and the manner in which the scales were revised, it may be assumed that the scales of AYYF(III) measure the same constructs as the scales of AYYF(I). Therefore, the evidence presented for the validity of AYYF(I) may be assumed to apply to AYYF(III) as well.

Normative Data

Normative data for AYYF(I), based on data collected from the PRIME Year I sample, are available by sex and handicap status and are presented in the form of percentile scores (Tables 18-21). Users of the normative data for female LLD students should be cautioned that the size of this subsample is very small. Normative data are not available for AYYF(III), due to the small PRIME Year III sample and the nonrandom nature of the sampling procedures.

Potential users of AYYF(I) may wish to use the PRIME normative data as a guideline for interpreting the results obtained from their own samples. Prior to making comparisons with the PRIME normative data, users are encouraged to study the PRIME Year I sample characteristics (p. 34) and compare them with their own samples, especially on such dimensions as ethnicity and social class, in order to determine the applicability of the PRIME normative data to their samples. If a sufficiently large sample is available, consideration should be given to the development of local norms since these norms best facilitate comparisons within the user's sample.

Table 18

Percentile Equivalents for AYYF(I) Scale I -- Isolation/Anxiety

	Male			Female		
Score	EMR	LLD/MBI	N	EMR	LLD/MBI	N
19	1	1	1	1	1	1
20	1	1	2	1	1	1
21	1	3	5	1	1	3
22	3	8	9	1	3	9
23	6	12	15	2	7	16
24	10	17	23	6	10	25
25	17	23	32	9	16	35
26	25	33	41	13	24	45
27	35	43	50	22	35	56
28	44	51	61	32	48	64
29	52	60	70	43	58	71
30	62	70	77	53	66	78
31	72	77	83	65	74	85
32	79	83	88	75	82	90
33	85	89	92	82	88	93
34	90	93	94	88	91	95
35	94	96	96	93	95	97
36	97	98	99	97	97	98
37	99	99	99	99	99	99
38	99	99	99	99	99	99
N	385	239	506	234	76	471
$\bar{M}$	28.8	28.0	27.1	29.7	28.6	26.9
$\bar{S}$	3.8	3.9	3.9	3.3	3.7	3.8
$\bar{SM}$	.19	.25	.17	.22	.42	.17

Note. EMR = educable mentally retarded; LLD = language and/or learning disabled; MBI = minimally brain injured; N = normal.

Table 19

Percentile Equivalents for AYYF(I) Scale II -- School Enthusiasm

	Male			Female		
Score	EMR	LLD/MBI	N	EMR	LLD/MBI	N
30	1	1	1	1	1	1
31	1	1	1	1	1	1
32	1	1	1	1	1	1
33	1	1	1	1	1	1
34	1	1	1	1	3	1
35	1	2	1	1	4	1
36	1	2	1	1	6	1
37	1	3	1	1	6	1
38	1	4	2	1	7	1
39	1	5	2	1	7	1
40	2	6	3	1	7	1
41	3	7	4	1	8	1
42	4	8	5	2	8	1
43	5	9	6	3	10	1
44	6	10	8	4	11	1
45	8	13	10	4	12	2
46	10	17	12	5	14	3
47	13	20	15	6	15	4
48	16	23	18	10	18	5
49	20	28	21	15	20	6
50	24	32	23	20	21	8
51	30	37	26	24	25	12
52	38	43	31	30	32	15
53	45	49	37	37	38	20
54	51	56	43	44	43	28
55	59	64	51	53	53	36
56	68	73	62	64	62	46
57	76	82	73	76	71	58
58	86	88	83	86	81	75
59	95	94	92	95	92	88
60	99	98	98	99	99	97
N	388	241	506	235	78	471
$\bar{M}$	52.8	51.7	53.2	53.7	52.7	55.4
$\bar{S}$	5.1	6.1	5.4	4.4	6.7	3.8
$\bar{SM}$	.26	.39	.24	.29	.76	.18

Note. EMR = educable mentally retarded; LLD = language and/or learning disabled; MBI = minimally brain injured; N = normal.

Table 20

Percentile Equivalents for AYYF(I) Scale III -- Academic Competence

	Male			Female		
Score	EMR	LLD/MBI	N	EMR	LLD/MBI	N
21	1	1	1	1	1	1
22	1	2	1	1	1	1
23	1	3	1	1	3	1
24	2	3	1	1	4	1
25	3	5	2	3	5	2
26	4	6	4	4	8	3
27	6	8	6	6	14	6
28	8	11	10	9	16	9
29	10	15	13	13	19	11
30	13	20	17	18	22	14
31	17	23	22	23	27	17
32	21	29	27	29	34	22
33	27	36	33	36	40	27
34	36	41	39	45	47	34
35	45	47	45	54	56	43
36	56	55	52	64	63	52
37	66	63	60	73	68	62
38	74	69	69	79	74	68
39	83	78	78	86	83	77
40	92	88	86	92	90	86
41	97	95	94	97	94	93
42	99	99	98	99	98	98
N	389	241	506	235	78	471
$\bar{M}$	34.9	34.5	34.9	34.2	33.8	35.2
$\bar{S}$	4.2	4.9	4.6	4.2	5.1	4.4
$\bar{SM}$	.21	.32	.21	.28	.58	.20

Note. EMR = educable mentally retarded; LLD = language and/or learning disabled; MBI = minimally brain injured; N = normal.

Table 21

Percentile Equivalents for AYYF(I) Scale IV -- Misbehavior

	Male			Female		
Score	EMR	LLD/MBI	N	EMR	LLD/MBI	N
13	2	5	7	3	8	14
14	8	17	20	10	25	39
15	17	29	33	23	42	58
16	27	41	46	37	54	72
17	40	52	58	50	61	81
18	53	59	68	65	71	87
19	65	67	76	78	82	92
20	75	75	83	86	90	96
21	83	83	90	92	96	97
22	90	89	95	96	97	98
23	95	93	97	97	98	99
24	97	95	99	99	98	99
25	99	98	99	99	99	99
26	99	99	99	99	99	99
N	385	238	506	234	76	471
$\bar{M}$	18.0	17.5	16.8	17.1	16.3	15.2
$\bar{S}$	2.9	3.3	2.9	2.6	2.8	2.4
$\bar{S}M$	.15	.22	.13	.17	.32	.11

Note. EMR = educable mentally retard[illegible] = language and/or learning disabled; MBI = minimally brain injured; N = normal.

PART IV. CONCLUSION

This report has presented evidence on About You and Your Friends, a self-report attitude and self-concept inventory designed to measure student perceptions of personal isolation/anxiety, school enthusiasm, academic competence, and misbehavior. AYYF was developed as a part of the instrument battery for Project PRIME, Year I, a descriptive/correlational study of mainstreaming.

In the process of establishing the PRIME instrument battery, other instruments measuring attitudes and self-concept were judged inappropriate because of inadequate or unsuitable content, format difficulties, or lack of established psychometric evidence; development efforts were undertaken to design and construct a new instrument. AYYF, the product of these efforts, was designed for use with normal and mildly cognitively impaired students of elementary school age. The instrument consists of 53 forced-choice binary questions which are read to the students and to which they respond by writing the words, "yes" or "no". The questions use a controlled vocabulary. The format of the instrument and the administrative procedures were designed to maximize attention and minimize the cognitive demands of the task.

AYYF was administered to 1,114 normal and 1,096 mildly cognitively impaired students in 156 school buildings in 43 school districts in the state of Texas. Because of the geographic location, Mexican-American students are overrepresented in the sample, and special administrative procedures including a Spanish translation were developed to insure valid testing of this ethnic group.

Protocols obtained from this administration were factor-analyzed using an image analysis procedure. An orthogonal solution that yielded four psychologically interpretable scales was selected as the basis for scoring the instrument. Scale scores were obtained by assigning each item to the factor on which it loaded most heavily and applying Likert unit-weighted scoring procedures to those items. The

resulting scales were named Isolation/Anxiety, School Enthusiasm, Academic Competence and Misbehavior.

For subsequent PRIME research activities, the original AYYF was modified, resulting in a shorter (50 items), less ambiguous instrument. An empirical comparison of the factor structures of the two instruments provides evidence for their similarity.

The reliability of each scale was assessed using an alpha analysis procedure. The relatively high alpha coefficients obtained (.69 to .88) suggest that both instruments possess acceptable reliability even when used with cognitively impaired students.

Construct validity of the instrument was explored by examining the instrument's content representativeness, structural soundness, and nomological network strength. The developmental design and professional review of AYYF provided evidence for the content representativeness of the instrument. The establishment of a strong factor structure consisting of internally consistent scales and similar in structure to the original hypothesized conceptual model provided evidence for AYYF's structural soundness. Nomological network strength was established by comparing AYYF scales with other self-report and external source scales measuring similar traits and by demonstrating that each AYYF scale is able to differentiate subgroups in the predicted direction. Normative data for AYYF(I) was presented separately for males and females in the normal, EMR and LLD/MBI classifications.

The developers of AYYF recommend the use of the instrument for obtaining self-concept and attitudinal information from normal and mildly handicapped students for research and evaluation purposes. The developers are willing to consult with potential users and to provide necessary supportive technical assistance in the administration, scoring, and interpretation of the instrument.

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APPENDIX A: INSTRUMENTS REVIEWED FOR PROJECT PRIME

Note: Tests marked ** contributed items to the AYYF item pool.

1. Adjective Checklist of Children's Perceptions of Teacher's Feelings Toward Them. (Helen Davidson & Gerhard Lang). From Davidson, H. H., and Lang, G. Children's perceptions of their teachers' feelings toward them related to self-perception, school achievement and behavior. Journal of Experimental Education, 1960, 29, 107-118.

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3. Attitude Toward Subject Areas and Classroom Activities. (Pauline Sears). From Sears, P.S. The effect of classroom conditions on the strengths of achievement motive and work output of elementary school children. (Cooperative Research Project No. OE 873), Washington, D.C.: U.S. Office of Education, 1963.

**4. Barclay Classroom Climate Inventory. (James R. Barclay). From James R. Barclay, Department of Educational Psychology, University of Kentucky, Lexington, Kentucky.

**5. California Test of Personality (Elementary). (Louis Thorpe, Willis Clark & Ernest Tiegs). From California Test Bureau, Princeton Road S-2, Highstown, New Jersey 08520.

6. Campos Story Completion Technique. (L. P. Campos). From Campos, L. P. The relationship between some factors of parental deprivation and delay of need-gratification. Unpublished Ph.D. dissertation. Michigan State University, U. Mic. #64-923, 1963.

7. Children's Form of the Manifest Anxiety Scale. (Alfred Castaneda, Boyd McCandless & David Palermo). From Castaneda, A., McCandless, B. R. and Palermo, D. S. The children's form of the manifest anxiety scale. Child Development, 1956, 27, 317-326.

**8. Children's Personality Questionnaire (IPAT). (Rutherford Porter & Raymond Cattell, 1968). From Institute of Personality and Ability Testing, 1602 Coronado Drive, Champaign, Illinois.

**9. CLOE-C Scale (Locus of Control). (James Miller). From James Miller, George Peabody College for Teachers, Nashville, Tennessee.

**10. Coleman School Survey Test--Questionnaire. (Educational Testing Service). From Coleman, J. S. Equality of educational opportunity. Washington, D.C.: U.S. Government Printing Office, 1966.

**11. Dependence Proneness Scale. (Ned Flanders, Paul Anderson & Edmund Amidon). From Flanders, N. A., Anderson, J. P. and Amidon, E. J. Measuring dependence proneness in the classroom. Educational and Psychological Measurement, 1961, 21, 575-587.

**12. EPIC Achievement Motivation. (EPIC Diversified Systems Corporation). From Evaluation of state plan for special education, State of Texas, Texas Education Agency, Division of Special Education, Austin, Texas, Circa 1971.

13. Family Variables. (Jane Mercer). From Proposal for current NIMH grant. Dr. Jane Mercer, 3393 University Avenue, Riverside, California 92501.

14. The Generalized Situational Choice Inventory. (William Farquhar). From Dr. William W. Farquhar, 439 Erickson Hall, Michigan State University, East Lansing, Michigan 48823.

15. Guess Who. (Roslyn Grady). From C. H. Stoelting Company, 424 N. Homan Avenue, Chicago, Illinois 60624.

16. Gumpgookies. (Dorothy Adkins). From Dorothy Adkins, Center for Research in Early Childhood Education, University of Hawaii, 1776 University Avenue, Honolulu, Hawaii 96822.

17. How I Feel. (Ronald Klinger). From Shift of Emphasis Program, Region XIII, Education Service Center, Austin, Texas.

18. How I Feel. (Pearline Peters Yeatts). From Pearline Peters Yeatts, College of Education, University of Georgia, Athens, Georgia.

**19. The How I Feel Test. (Roslyn Grady). From C. H. Stoelting Company, 424 N. Homan Avenue, Chicago, Illinois 60624.

**20. How I See Myself. (Ira Gordon). From Ira Gordon, Director, Institute for Development of Human Resources, College of Education, University of Florida, Gainesville, Florida 32601.

21. Human Trait Inventory (Michigan State M-Scale). (William Farquhar). From Dr. William W. Farquhar, 439 Erickson Hall, Michigan State University, East Lansing, Michigan 48823.

22. Identification Sheet. (Gertrude Driscoll). From Cunningham, R. Understanding group behavior of boys and girl. New York: Bureau of Publications, Teachers College, Columbia University, 1951.

23. Institute of Child Study Security Test. (Michael Grapko). From Institute of Child Study, University of Toronto, Canada.

24. Intellectual Achievement Responsibility Questionnaire. (Virginia Crandall, Walter Katkovsky & Vaugh Crandall). From Crandall, V. E., Katkovsky, W. and Crandall, V. J. Children's beliefs in their own control of reinforcements in intellectual-academic achievement situations. Child Development, 1965, 36, 91-95.

25. Inventory of Vocational Interests. (Inter-American Series, Herschel T. Manuel). From Guidance Testing Associates, 6516 Shirley Avenue, Austin, Texas 78752.

26. The Jesness Inventory. (Carl Jesness). From Consulting Psychologists Press, 577 College Avenue, Palo Alto, California 94306.

27. Laurelton Self-Attitude Scale. (L. Gorlow, A. Butler, & G. M. Guthrie). From Gorlow, L., Butler, A., and Guthrie, G. M. Patterns of self-attitudes of retardates. American Journal of Mental Deficiency, 1961, 66, 222-229.

28. Learning Environment Inventory. (Herbert Walberg & Gary Anderson). From Anderson, G. J. The assessment of learning environments: a manual for the learning inventory and the My Class Inventory. Halifax, Nova Scotia: Atlantic Institute of Education, 1971.

29. Lipsitt Self-Concept Scale for Children. (Lewis Lipsitt). From Lipsitt, L. P. A self-concept scale for children and its relationship to the Children's Form of the Manifest Anxiety Scale. Child Development, 1958, 29, 463-472.

30. Locus of Control. (Pauline Sears [modified and extended by Virginia Shipman]). From Pauline Sears, 110 Golden Oak Drive, Portola Valley, California 94026, and Dr. Virginia Shipman, ETS, Princeton, New Jersey 08540.

31. Mitchell's Guess Who Questionnaire. (James Mitchell, Jr.). From Mitchell, J. V., Jr. The factor analysis of a "Guess Who" Questionnaire designed to identify significant behavior patterns in children. Journal of Personality, 1956, 24, 376-386.

32. Miller's Sociometric Procedures. (Robert Miller). From Miller, R. V. Social status and socio-emphatic differences. Exceptional Children, 1956, 23, 114-119.

33. My Class. (Ronald Klinger). From Shift of Emphasis Program, Region XIII, Education Service Center, Austin, Texas.

34. My Class. (Herbert Walberg & Gary Anderson). From Anderson, G. J. The assessment of learning environments: a manual for the learning inventory and the My Class Inventory. Halifax, Nova Scotia: Atlantic Institute of Education, 1971.

35. My Classmates. (Ronald Klinger). From Shift of Emphasis Program, Region XIII, Education Service Center, Austin, Texas.

36. My Feelings About School. (EPIC Diversified Systems Corporation). From Evaluation of State Plan for Special Education, State of Texas, Texas Education Agency, Division of Special Education, Austin, Texas, Circa 1971.

37. Ohio Social Acceptance Survey. (W. G. Fordyce, W. A. Yauck & L. Raths). From Fordyce, W. G., Yauck, W. A. & Raths, L. A manual for the Ohio guidance tests for the elementary grades. Columbus, Ohio: Ohio State Department of Education, 1946.

**38. STS Junior Inventory. (H. H. Remmers & Robert Baunerfiend). From Scholastic Testing Service, 480 Meyer Road, Bensenville, Illinois.

**39. School Morale (S-M Scale). (Lawrence Wrightsman, Ronald Nelson & Maria Taranto). From Dr. Lawrence S. Wrightsman, George Peabody College, Box 512, Nashville, Tennessee.

40. Sears Self-Concept Inventory. (Pauline Sears). From Sears, P. S. The effects of classroom conditions on the strengths of achievement motive and work output of elementary school children. (Cooperative Research Project No. OE 873), Washington, D.C.: U.S. Department of H.E.W., Office of Education, 1963.

**41. Self-Concept. (James Parket). From Parket, J. The relationship of self report to inferred self concept. Educational and Psychological Measurement, 1966, 26, 691-700.

42. Self-Concept and Motivation Scale. (George Farrah). From Person-O-Metrics, Measurement and Appraisal of Human Behavior, 20504 Williamsburg Road, Dearborn Heights, Michigan 48127.

**43. Self-Concept as a Learner Scale. (John Fisher). From John K. Fisher, Assistant Vice-President for Academic Affairs, Commonwealth of Pennsylvania, Department of Education, Edinboro State College, Edinboro, Pennsylvania 16412.

**44. Self-Esteem Inventory. (Stanley Coopersmith). From Dr. Stanley Coopersmith, Department of Psychology, University of California at Davis, Davis, California.

45. Social Analysis of the Classroom. (Ruth Cunningham). From Cunningham, R. Understanding group behavior of boys and girls. New York: Bureau of Publications, Teachers College, Columbia University, 1951.

46. Socio-metric Reputation Nomination Scale. (Who-type scale). (Eleanor H. Barberousse). From Dr. Eleanor H. Barberousse, 17500 Dade Court, Rockville, Maryland.

47. Tennessee Self-Concept Scale. (W. H. Fitts). From Counselor Recordings and Tests, Nashville: 1965.

48. Warner Measurement of Social Status. (Lloyd Warner, Marchia Meeker & Kenneth Eells). From Warner, W. L , Meeker, M. and Eells, K. Social class in America: a manual of procedure for measurement of social status. New York: Harper & Row, 1960.

**49. Wide Range Self Concept Scale. (Ellen Piers & Dale Harris). From Document No. 7809, American Documentation Institute, Auxiliary Publications Project, Photo-duplication Service, Library of Congress, Washington, D.C. 20504.

50. Who Am I. (Paul Bowman, Robert DeHaan, Jon Kough & Gordon Liddle). From Bowman, P. H., DeHaan, R. F., Kough, J. K. and Liddle, G. P. Mobilizing community resources for youth. Chicago: University of Chicago Press, Supplementary Educational Monographs, #85, 1956.

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APPENDIX B: SAMPLE QUESTION SHEETS, ANSWER SHEETS, AND SCORE SHEETS FOR AYYF(I) AND AYYF (III)

PROJECT PRIME

ABOUT YOU AND YOUR FRIENDS

(TEST ADMINISTRATOR'S INSTRUCTIONS)

TO BE ADMINISTERED TO SELECTED CHILDREN IN SMALL GROUPS

NOTE TO TEST ADMINISTRATOR

BEFORE PASSING OUT THE PUPIL ANSWER SHEET YOU MUST WRITE EACH STUDENT'S SEVEN DIGIT IDENTIFICATION NUMBER IN THE BOXES LABELED PUPIL I.D. THE PUPIL I.D. BOXES ARE IN THE UPPER RIGHT HAND CORNER. EACH CHILD MUST RECEIVE THE ANSWER SHEET WITH HIS UNIQUE SEVEN DIGIT IDENTIFICATION NUMBER.

BE SURE TO PRECEDE EACH QUESTION WITH ITS APPROPRIATE NUMBER. THE PUPIL'S ANSWER SHEET IS DESIGNED SUCH THAT EVERY FIVE QUESTIONS ARE ENCLOSED IN A SEQUENTIALLY LETTERED SET OF BOXES. TAKE EVERY PRECAUTION TO ASSURE THAT THE PUPILS ARE ANSWERING IN THE APPROPRIATELY NUMBERED SPACE.

TO BE READ TO SELECTED CHILDREN

Listen carefully while I read you some questions. After I read a question, think about the things that have happened to you in school and decide whether you would answer YES or NO. If your answer is YES, write the word "YES" on your answer sheet. If your answer is NO, write the word "NO".

DEMONSTRATE SAMPLE QUESTIONS ON THE BLACKBOARD

For example, "Do you like to play football?" Write your answer on your answer sheet. If your answer is YES, write the word "YES" beside number 1. If your answer is NO, write the word "NO" beside number 1.

Let's try one more question: "Are you good at cooking?" If you are good at cooking, your answer is YES. Write "YES" beside number 2. If you are not good at cooking, write "NO" beside number 2.

Okay, let's begin now.

PROJECT PRIME

ABOUT YOU AND YOUR FRIENDS (I)

(ADMINISTRATOR'S QUESTION SHEET)

A

1. Do you like to play football?
2. Are you good at cooking?
3. Do you find it easy to get along with your classmates?
4. Do you want to learn to do your school work better?
5. Are you doing well in your school work?

NOW LET'S MOVE ON TO THE BOX LETTERED "B"

B

6. Do you like to start work on new activities?
7. Do you forget what you learn?
8. Do you wish that the teachers were not so strict?
9. In class, do you go along with everyone else even when you disagree?
10. Are you happy in school?

NOW LET'S MOVE ON TO THE BOX LETTERED "C"

C

11. Do you like to be called on in class?
12. Do you do your work quickly?
13. Do you get along well with your teachers?
14. Do you have fun at school?
15. Do you ever do extra work that isn't required?

NOW LET'S MOVE ON TO THE BOX LETTERED "D"

D

16. When you get in a fight, is it usually your fault?
17. Are you a hard worker in school?
18. Do you wish children at this school were friendlier to you?
19. Is school interesting to you?
20. Are you doing the best work that you can?

NOW LET'S MOVE ON TO THE BOX LETTERED "E"

E

21. Do you wish you had extra help with your school work?
22. Are you slow in finishing your school work?
23. Can you figure out problems for yourself?
24. Are you smart?
25. Do you like school?

NOW LET'S MOVE ON TO THE BOX LETTERED "F"

F

26. Do you think you are one of the hardest workers?
27. Do you get worried when you have tests in school?
28. Would you stay home from school a lot if it were all right?
29. Do you like arithmetic?
30. Do you usually do well on tests?

NOW LET'S MOVE ON TO THE BOX LETTERED "G"

G

31. Do you get nervous when the teacher calls on you?
32. Do most of your friends think you're smart?
33. Do you ever study things on your own?
34. Do you work well with the other children on projects?
35. Is the school work so hard that you are afraid you will fail?

NOW LET'S MOVE ON TO THE BOX LETTERED "H"

H

36. Do you think you know as much as the other children in your classes?
37. Do you get into trouble in school?
38. Do you have good ideas?
39. When you have free time, do you ask your teacher what to do?
40. Is your work sometimes so hard that you stop trying?

NOW LET'S MOVE ON TO THE BOX LETTERED "I"

I

41. Do you ever think up new ideas?
42. Can you give a good report in front of the class?
43. Are you a good reader?
44. Do you write good stories and reports?
45. Do you get a lot of scolding at school?

NOW LET'S MOVE ON TO THE BOX LETTERED "J"

J

46. Do you like reading?
47. Are you afraid to try new things?
48. Do you make up your mind without asking someone else first?
49. Do you like to talk in the class discussions?
50. Is it fun to try out ideas that others think are crazy?

NOW LET'S MOVE ON TO THE BOX LETTERED "K"

K

51. Do you like science?
52. Do you often disagree with what the teacher says?
53. Are you well behaved in school?
54. Does your teacher have to tell you to do your work?
55. Do people like you have much of a chance to be successful in life?

NOW LET'S MOVE ON TO THE BOX LETTERED "L"

L

56. Would you be able to make the right decisions if you were president of your class?
57. Are you afraid you'll do something wrong at school?
58. Do you wish you were smarter in school?
59. Do you have trouble making up your mind?
60. Would you rather watch games and sports than play them?

NOW LET'S MOVE ON TO THE BOX LETTERED "M"

M

61. Do you fight too much?
62. Do you like to be with other children?
63. Are you an important person in your class?
64. Do you laugh when others make mistakes?
65. Do you wish you were better at games?

NOW LET'S MOVE ON TO THE BOX LETTERED "N"

N

66. Do you try to be friends with children who don't like you?
67. Is it hard to talk with your classmates?
68. Do you like gym?
69. Do you like music?
70. Are you mean to other children?

NOW LET'S MOVE ON TO THE BOX LETTERED "O"

O

71. Are you a bully?
72. Do your classmates make fun of you?
73. Do children usually ask you to play with them?
74. Do you have only a few friends?
75. Are you one of the last to be chosen for games?

NOW LET'S MOVE ON TO THE BOX LETTERED "P"

P

76. Do you fool around too much in class?
77. Is it hard for you to make friends?
78. Do most of your classmates like you?
79. Do your friends want to help you?
80. Do you like to eat lunch by yourself?

NOW LET'S MOVE ON TO THE BOX LETTERED "Q"

Q

81. Are you willing for others to have their own way?
82. Do you think you need more friends?
83. Do you like to help other children?
84. Would you rather play with children younger than you?
85. Do you take an active part in class projects?

NOW LET'S MOVE ON TO THE BOX LETTERED "R"

R

86. Do other children pick on you?
87. Do you play fair with your classmates?
88. Do you like art?
89. Are you one of the first to be chosen for a game?
90. Do you wish you could be a leader more often?

NOW LET'S MOVE ON TO THE BOX LETTERED "S"

S

91. If a classmate calls you a bad name, do you fight?
92. Do you feel left out of things in your class?
93. Do you talk to new children at school?
94. Are you good at math?
95. Can you make the other children stop if they are bothering you?
96. Would you do something you think is wrong if your friends ask you to?

PROJECT PRIME
ABOUT YOU AND YOUR FRIENDS
(PUPIL'S ANSWER SHEET)

PUPIL I.D.

A

1. _____
2. _____
3. _____
4. _____
5. _____

B

6. _____
7. _____
8. _____
9. _____
10. _____

C

11. _____
12. _____
13. _____
14. _____
15. _____

(Pupil's Answer Sheet Continued)

D

16. _____

17. _____

18. _____

19. _____

20. _____

E

21. _____

22. _____

23. _____

24. _____

25. _____

F

26. _____

27. _____

28. _____

29. _____

30. _____

(Pupil's Answer Sheet Continued)

G

31. _____

32. _____

33. _____

34. _____

35. _____

H

36. _____

37. _____

38. _____

39. _____

40. _____

I

41. _____

42. _____

43. _____

44. _____

45. _____

(Pupil's Answer Sheet Continued)

J

46. _____

47. _____

48. _____

49. _____

50. _____

K

51. _____

52. _____

53. _____

54. _____

55. _____

L

56. _____

57. _____

58. _____

59. _____

60. _____

(Pupil's Answer Sheet Continued)

M

61. _____

62. _____

63. _____

64. _____

65. _____

N

66. _____

67. _____

68. _____

69. _____

70. _____

O

71. _____

72. _____

73. _____

74. _____

75. _____

(Pupil's Answer Sheet Continued)

P

76. _____

77. _____

78. _____

79. _____

80. _____

Q

81. _____

82. _____

83. _____

84. _____

85. _____

R

86. _____

87. _____

88. _____

89. _____

90. _____

(Pupil's Answer Sheet Continued)

S

91. _____

92. _____

93. _____

94. _____

95. _____

96. _____

INDIVIDUAL PUPIL SCORE SHEET: AYYF(I)

DIRECTIONS: ENTER PUPIL SCORE (YES=2; NO=1) IN THE BLANK NEXT TO ITEM NUMBER.

EXCEPTION: FOR STARRED (*) ITEMS, (NO=2; YES=1).

ITEM NO.	SCALE I	SCALE II	SCALE III	SCALE IV
*3	*			
4				
5				
6				
*7			*	
10				
11				
12				
13				
14				
17				
18				
19				
20				
21				
*22			*	
23				
24				
25				
26				
27				
*28		*		
29				
30				
31				
*32			*	
33				
34				
35				
36				
37				
38				
40				
41				
42				
43				
44				
45				
46				
47				
49				
51				
SUB-TOTAL				

ITEM NO.	SCALE I	SCALE II	SCALE III	SCALE IV
52				
*53				*
54				
55				
56				
57				
58				
59				
*61				*
62				
63				
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66				
67				
68				
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79				
*80		*		
82				
83				
84				
85				
86				
88				
89				
90				
91				
92				
93				
94				
96				
SUB-TOTAL				

COMPUTATION OF SCORES

	SCALE I	SCALE II	SCALE III	SCALE IV
A) COMPLETED ITEM SCORE (ADD TWO SUBTOTAL SCORES)				
B) EST. MISSING SCORE A/(# COMPLETE ITEMS)				
C) (# MISSING ITEMS) X B				
D) FINAL SCALE SCORE A + B		114		

PROJECT PRIME

ABOUT YOU AND YOUR FRIENDS (III)

(ADMINISTRATOR'S QUESTION SHEET)

A

1. Do you like to play football?
2. Are you good at cooking?
3. Do children usually ask you to play with them?
4. Do you do your work quickly?
5. Do you think you are one of the hardest workers in your class?

NOW LET'S MOVE ON TO THE BOX LETTERED "B"

B

6. Are you well behaved in school?
7. Do you read well?
8. Do you think up good ideas?
9. Do you like to be with other children?
10. Do you get very worried whenever you have to take a test?

NOW LET'S MOVE ON TO THE BOX LETTERED "C"

C

11. Do you fight too much?
12. Are you doing well in your school work?
13. Do you get into trouble in school?
14. Are you an important person in your class?
15. Do you talk to new children at school?

NOW LET'S MOVE ON TO THE BOX LETTERED "D"

D

16. Is school interesting to you?
17. Do you like math (arithmetic)?
18. Do you get a lot of scolding at school?
19. Do you have fun at school?
20. Do most of your classmates like you?

NOW LET'S MOVE ON TO THE BOX LETTERED "E"

E

21. Do you like to help other children?
22. Does your teacher have to tell you to do your work?
23. Do you think you know as much as the other children in your class?
24. Are you mean to other children?
25. Are you one of the last to be picked for games?

NOW LET'S MOVE ON TO THE BOX LETTERED "F"

F

26. Do you laugh when others make mistakes?
27. Are you smart?
28. Do you have only a few friends?
29. Do your friends like to help you?
30. If a classmate calls you a bad name, do you fight?

NOW LET'S MOVE ON TO THE BOX LETTERED "G"

G

31. Do other children pick on you?
32. Do you get along well with your teachers?
33. Do you write good stories and reports?
34. Do you usually do well on tests?
35. Do you like school?

NOW LET'S MOVE ON TO THE BOX LETTERED "H"

H

36. Do your classmates make fun of you?
37. Do you get nervous (worried) when the teacher calls on you?
38. Do most of your friends think you're smart?
39. Do you fool around too much in class?
40. Are you happy in school?

NOW LET'S MOVE ON TO THE BOX LETTERED "I"

I

41. Can you give a good report in front of the class?
42. Do you like reading?
43. Do you feel left out of things (activities) in your class?
44. Are you afraid you'll do something wrong at school?
45. Do you think you need more friends?

NOW LET'S MOVE ON TO THE BOX LETTERED "J"

J

46. Are you good at math (arithmetic)?
47. Is it hard for you to make friends?
48. Would you do something wrong because your friends ask you to?
49. Is the school work so hard that you are afraid you will fail?
50. Are you afraid to try new things?

NOW LET'S MOVE ON TO THE BOX LETTERED "K"

K

51. Is it hard to talk with the other children in your class?
52. Do you often disagree with what the teacher tells you to do?

INDIVIDUAL PUPIL SCORE SHEET: AYYF(III)

DIRECTIONS: ENTER PUPIL SCORE (YES=2; NO=1) IN THE BLANK NEXT TO ITEM NUMBER.

EXCEPTION: FOR STARRED (*) ITEMS, (NO=2; YES=1)

ITEM NO.	SCALE I	SCALE II	SCALE III	SCALE IV
3				
4				
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* 6				*
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COMPUTATION OF SCORES

A) COMPLETED ITEM SCORE	_____	_____	_____	_____
B) EST. MISSING SCORE A/(# COMPLETE ITEMS)	_____	_____	_____	_____
C) (# MISSING ITEMS) X B	_____	_____	_____	_____
D) FINAL SCALE SCORE A + B	_____	_____	_____	_____